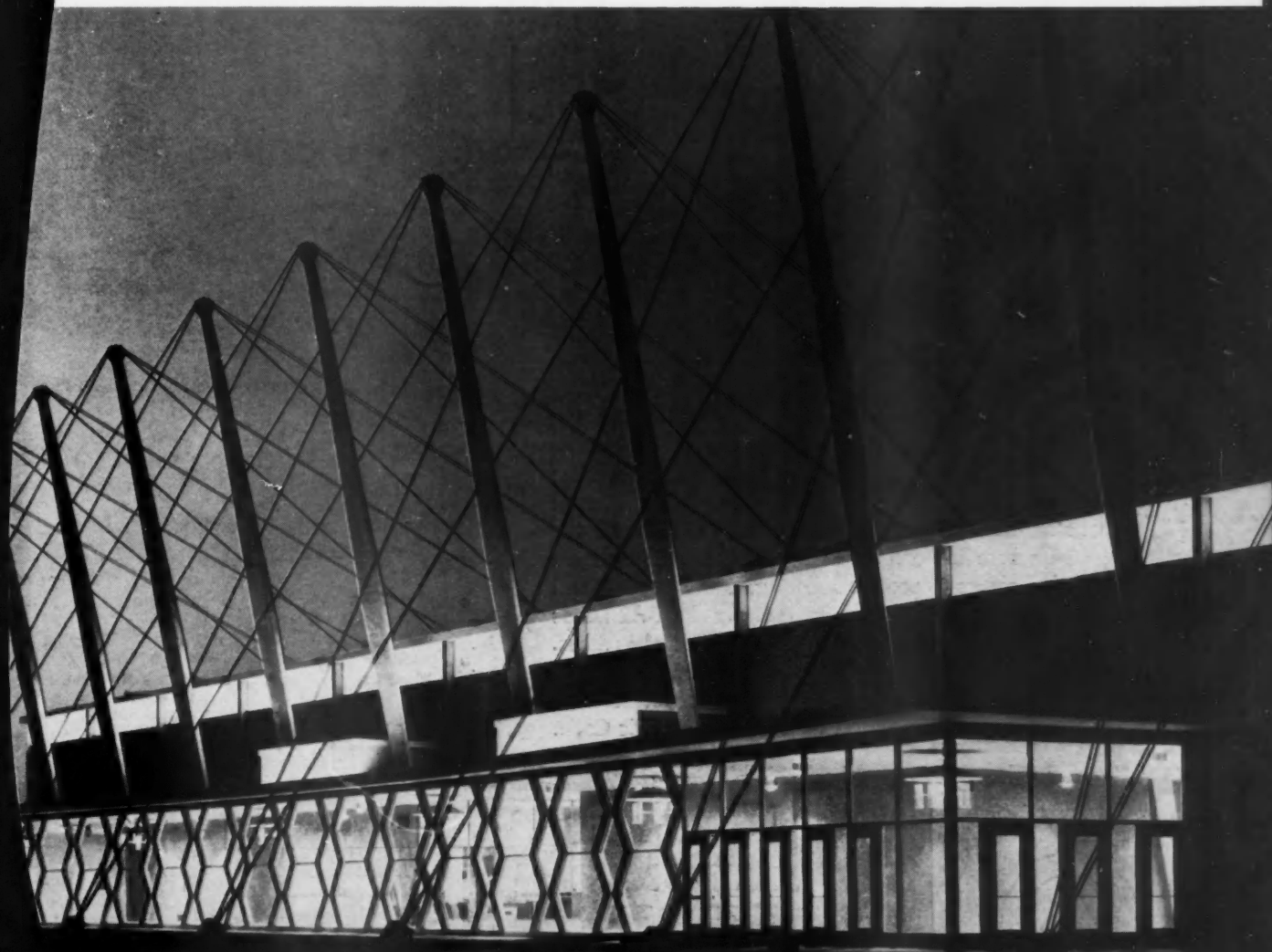


November 1961

Lighting

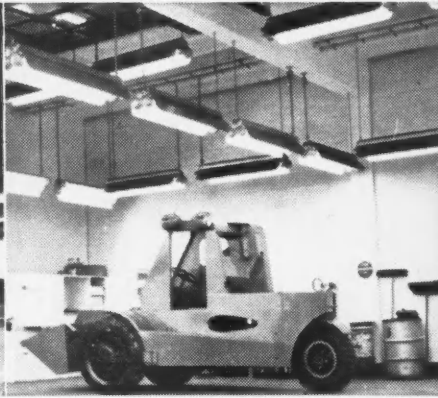
COMMERCIAL — INDUSTRIAL — INSTITUTIONAL — OUTDOOR — RESIDENTIAL

a W.R.C. Smith publication

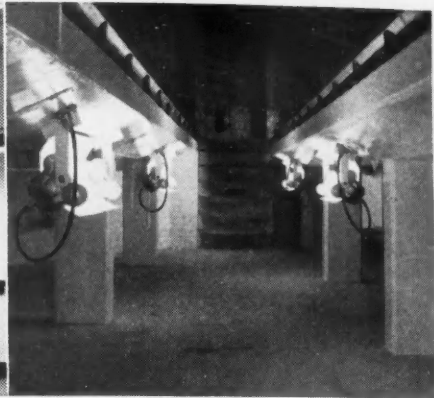




"EFU" Explosion-Proof Fixtures Give Safe, Bright Illumination in Paint Plants . . .



Dependable, Trouble-Free Service in Hazardous Area Paint Shops . . .



Modern, 45° Angle Mount in Garage Pits . . . or Wherever Safe Lighting is Required

**For Hazardous Area Lighting
You Can Rely On...**

APPLETON®

"EFU"

Explosion-Proof Fluorescent Fixtures

Quality built in every detail, APPLETON "EFU" fixtures are perfectly designed and carefully constructed by experienced craftsmen. Factory sealing eliminates the need for external seals. In addition, all models have cast aluminum end housings containing terminal blocks where line connections are made, and aluminum threaded covers to protect line connections, starters and lamps from hazardous fumes, dirt or dust. All lamps are protected and totally enclosed by heavy Pyrex glass tubes.

APPLETON "EFU" fluorescent fixtures are U.L. and C.S.A. approved and meet specifications of Article 500 of the National Electric Code.

Sold Through Franchised Distributors Only



Type "EFU" 2-Lamp Fixture
45° Angle Mounted and Suspended
From Type "ESS" Swivel Mounted
On "GRFC" Flanged Union With
Canopy



Pat. No. 2,392,202
and Pat. Pending

- Choice of 33 different models (see chart below)
- Available in 2, 3, or 4 lamp styles
- Choice of horizontal or 45° mounting
- Steel reflectors . . . white enameled inside, grey outside
- Relamping from either end
- "Rapid Start" ballast where desired
- Streamlined design, totally enclosed yet easily accessible
- Application layouts furnished by APPLETON upon receipt of installation data

"EFU" Fixtures Available As Indicated By •

Circuit Voltage 60 Cycle	40 WATT, 48 INCH T-12			100 WATT, 60 INCH T-17--BI-PIN		No Lamps
	Bi-Pin		Single- Pin Instant- Start Slimline	Pre- Heat	Rapid- Start	
	Pre- Heat	Rapid- Start				
110--125	●	●	●	●		2
	●	●	●			3
	●	●	●	●		4
199--216	●					2
	●					4
	●	●	●			2
220--250	●					3
	●	●	●	●	●	4
	●	●	●	●		2
250--290	●	●	●			3
	●	●	●	●	●	4



APPLETON
Electric Company

1701 Wellington Ave. • Chicago 13, Illinois

Also Manufacturers of:



Malleable Iron
Unions & Covers



"ST" Series Connectors



"Eagle Claw"
Switch Boxes



Reelites

America's Largest Manufacturer of Lighting Reproductions



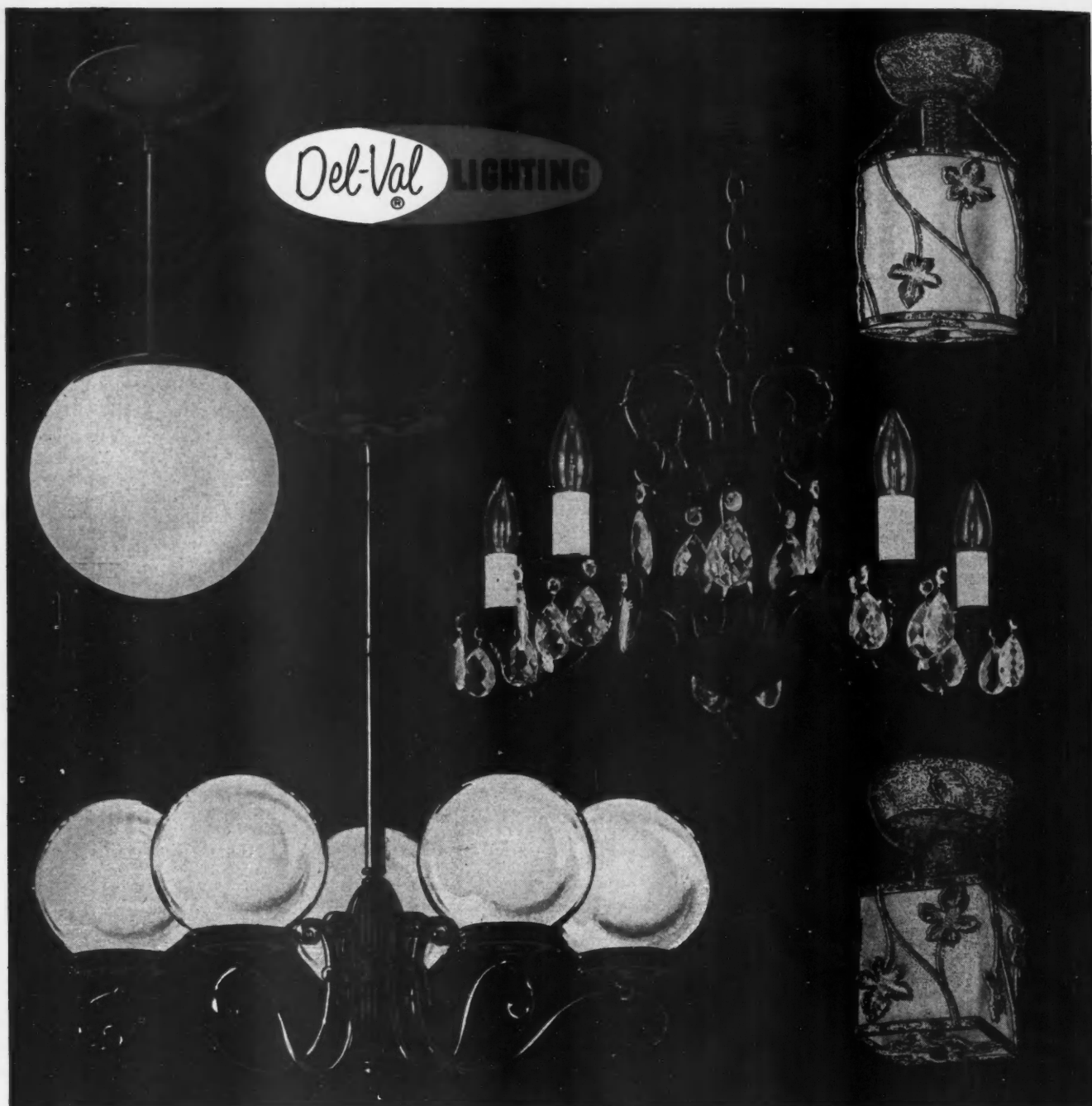
This antique was made in 1961

Early American Toll fixture with fount and burner stamped from the original dies. Hand-rubbed shade undercoated in white. 3-way socket takes 250 watts. Height adjustable.

NEW YORK: 129 W 27 St. Fact Shrm
CHICAGO: Mdse Mart, (open Jan 1)
DALLAS: Trade Mart, Rubye Tedder
MIAMI: 108 NE 39 St., A. Robert Schoen
SAN FRAN: West Mdse Mart, Lloyd Levy

Free 68 page catalogue Dept 9-9
129 West 27 St. New York City

THE ***Ruby***
COMPANY



DIVERSIFICATION IS DEL-VAL LIGHTING . . . Modern automated facilities, exclusive machinery, precision engineering, and creative ingenuity combine . . . to produce a most sale-able line of diversified lighting for interior and exterior home use . . . to assure the reliability of a prompt "IN-STOCK" shipping schedule on all orders received . . . to make it possible to sell quality lighting fixtures at prices that unequivocally prove "DEL-VAL Del-ivers Val-ue". Here is but a look-see of the diversified presentation of residential lighting. Qualified distributors are invited to investigate the extra profit potential in Del-Val LIGHTING by writing for the new, most comprehensive catalog, price sheets, and other conclusive data.

DEL-VAL MANUFACTURING COMPANY
519 W. HUNTINGDON STREET, PHILA. 33, PA. NEBRASKA 4-1100

For more details on above items, use reply card on page 21.

LIGHTING for NOVEMBER, 1961

Editorial Staff

CARL W. EVANS, Editor
WILLIAM B. WHITE, Associate Editor
ROBERT F. KING, Associate Editor
JO ANN PARKER, Assistant Editor
CAROLYN WASHBURN, Assistant Editor
Directory Issue



Editorial and Business Offices
Tel. TRinity 4-4462

1760 Peachtree Road, NW
Atlanta 9, Georgia

Business Staff

FRANK P. BELL, Business Manager
J. A. MOODY, Production Manager
H. REDFERN HOLLINS, Director Market Research
ROBERT L. BENNETT, Circulation Manager
R. E. CLEARY, Special Consultant

Business Representatives

Charlotte:

W. C. Ruffland
P.O. Box 102, Gastonia, N. C.
Telephone: UNiversity 7-7995

Chicago:

Robert A. Blum
333 No. Michigan Ave., Chicago 1, Ill.
Telephone: CEntral 6-6964

Cleveland:

W. G. Sheehan
17021 Amber Dr., Cleveland 11, Ohio
Telephone: Wlnton 1-1306

Dallas:

Baron Creager, Bob King
6131 Luther Lane, Suite 208,
Dallas 25, Texas
Telephone: EMerson 3-1543

Los Angeles:

Warren R. Christian
P.O. Box 39711, Los Angeles 39, Calif.
Telephone: NOrmandy 1-7457
Answering Service: HOLlywood 2-1133

Miami:

Ray Rickles, Ray Rickles & Co.
Chamber of Commerce Bldg.,
Miami 32, Fla.
Telephone: FRanklin 1-0376

New York:

Hugh M. Toomey
Room 610, 7 E. 42nd St., New York, N.Y.
Telephone: MUrray Hill 2-4959
J. D. Parsons (Upstate New York)
39 Atlantic Ave., Cohasset, Mass.
Telephone: EVERgreen 3-0712

San Francisco:

Fred Jameson
821 Edinburgh St., San Mateo, Calif.
Telephone: DIamond 3-8806

Officers

W. J. ROOKE, Chairman of the Board
RICHARD P. SMITH, President and Treasurer
FRANK P. BELL, Vice-President
JOHN C. COOK, Vice-President
E. W. O'BRIEN, Vice-President
A. F. ROBERTS, Vice-President
A. E. C. SMITH, Vice-President
SERA J. JONES, Secretary

LIGHTING for NOVEMBER, 1961



Vol. 77

November 1961

No. 11

- Landscape lighting beautifies park—32
- Prismatic lenses increase fixture efficiency—34
- Home relighting offers challenge to lighting industry—36
- Industrial lighting course emphasizes the practical—38
- 'Room of Tomorrow' features lighting trends—40
- Lighting blends with church design—42
- Fluorescent lamp dimming systems—44
- Successful firm outsells cutrate competitors—48
- Night lighting displays unique gymnasium—52

Departments

- Editorial comment—4
- Catalogs and bulletins—14
- Information reply card—21
- Outdoor lighting feature—32
- Lighting Code rules—54
- Lighting industry news—56
- Coming events—64
- New lighting products—65
- Manufacturers' literature—72
- Classified advertising—77

Copyright 1961, W. R. C. Smith Publishing Co., Atlanta, Georgia

W. R. C. SMITH PUBLISHING COMPANY

Publishers also of

SOUTHERN AUTOMOTIVE JOURNAL	TEXTILE INDUSTRIES	SOUTHERN HARDWARE
SOUTHERN BUILDING SUPPLIES	ELECTRICAL SOUTH	
SOUTHERN POWER & INDUSTRY	SOUTHERN FARM EQUIPMENT	

Published monthly at Nashville, Tenn., with editorial and executive offices at 1760 Peachtree Road, NW, Atlanta 9, Ga. U.S. yearly subscription, \$10; foreign yearly subscription, \$15. Controlled circulation postage paid at Nashville, Tenn.

Postmaster: Send notices by Form 3579 to 1760 Peachtree Road, NW, Atlanta 9, Ga.

IN THIS ISSUE

The interest in landscape lighting has increased considerably with spectacular lighting in several large park areas. One such recent installation lights Victoria Park. **Page 32.**

A recently completed office lighting installation demonstrates effective application of prismatic lenses. **Page 34.**

The tremendous market for home relighting to modern standards poses a real challenge to the lighting industry in the form of designing and marketing methods. **Page 36.**

An industrial lighting course that emphasizes the practical aspects of the subject is described by a well-known lighting engineer. **Page 38.**

"Room of Tomorrow" on display at hotel and motel show points up some important lighting design trends in this field. **Page 40.**

Unusual architectural design for churches often gives lighting engineers special problems. In an unusual structure designed for an Alexandria, Va., church, the consulting engineer approached the lighting design by delving into the feeling and philosophy that entered into the architect's design concept. **Page 42.**

Two experts in the field of lamp ballasts discuss the subject of dimming fluorescent lamps. Advantages and disadvantages of several different systems are discussed in considerable detail. **Page 44.**

A West Coast lighting equipment wholesaler tells how his firm has managed to outsell cut-rate competitors. **Page 48.**

Dramatic lighting for a gym with large overhead supported roof achieves unusual effect—a roof that floats. **Page 52.**



New dimension in lighting design

Research reported at the recent Technical Conference of the Illuminating Engineering Society indicates that lighting engineers will, in the future, find it profitable to utilize four criteria in designing systems that increase the effectiveness of light for seeing. To the three well-known characteristics of amount, color, and distribution, will be added that of polarization.

In research directed toward the reduction of reflected glare, Dr. H. Richard Blackwell, of the Institute for Research in Vision, Ohio State University, has found that the reflected glare effect can be considerably reduced by the use of polarized light.

The extent to which the eye can perform visual tasks indoors, according to Dr. Blackwell, depends to a considerable extent upon the size and contrast of the details of the task. The contrast of a visual task depends, in turn, upon both the physical characteristics of the materials which constitute the task and upon the physical characteristics of illumination striking the task.

Dr. Blackwell's recent studies indicate that losses in visual performance due to reflected glare are often equivalent to the losses in visual performance that would result from cutting light levels in half. In such an instance, it is as though half the light used to provide vision is wasted in so far as its effect upon vision is concerned. Such a magnitude of loss represents an effect of major importance in designing and using lighting.

One of the interesting aspects of Dr. Blackwell's recent research is that he has not only uncovered the magnitude of the deleterious effect of reflected glare, but he has also reported measurements on a series of new materials known as multilayer polarizers which can be put to immediate practical use for reducing reflected glare. These multilayer polarizing panels can be used either as diffusion panels on luminaires or as luminous ceiling material.

Dr. Blackwell recommends that the lighting industry modify its conventional Coefficients of Utilization by a new Visual Effectiveness Factor which will take account of the extent to which a particular type of installation will provide glare-free light.

Just as this issue goes to press, one large manufacturer of lighting fixtures has announced a line of luminaires utilizing special diffusion panels which also polarize a considerable part of the light emitted. Undoubtedly, polarization will be in the lighting industry's news in the immediate future as the industry evaluates Dr. Blackwell's test results.

—Carl W. Evans, Editor

NOW IT'S YOUR MOVE



No. 2000 — 2 light. Glass: Clear, cut, polished beveled edge. Dimensions: Width 5½"; Height 11½"; Overall length 18". Finish: Polished brass.



No. 321—Glass: Crystal clear cylinder. Dimensions: Diameter 10½"; Height 33"; Extension 12". Finish: Black with Brass Trim, White with Brass Trim, polished brass, weathered brass or oxidized copper.



No. 902—Glass: Clear. Dimensions: Diameter 11½"; Height 25"; Collar 3". Finishes: Satin Black with Brass Trim, White with Brass Trim, polished brass, weathered brass or oxidized copper.



No. 809—Clear polished bevelled, glass door bottom. Dimensions: Width 5½"; Height 13"; Extension 6¼". Finishes: Satin Black with Brass Trim, White with Brass Trim, polished brass, weathered brass or oxidized copper.



Your showroom is your castle. Display beautifully styled Artolier lanterns to check the attention of your customer kings and queens. Let Artolier be your shining knight in your move to greater profits.

Where quality and design show the way...

ARTOLIER
LANZA AVENUE, GARFIELD, N.J.

GUTH multi-mount EXITS



THE FIRST ALL-NEW "EXITS"

... since *doors* were invented!

A slight overstatement, maybe. But these Guth Exits DO introduce a lot of new ideas.

DESIGN-WISE — They're on the elegant side. A dramatic new shape with trapezoidal housing. Guth quality construction throughout. No screws to unlatch on face-plate doors. Doors lift up and swing open for easy servicing. The face slants to point directly at the natural "line of sight."

THREE LAMP SOURCES — Your choice of Incandescent, Fluorescent or those new, right-out-of-the future Electroluminescent panels.

FIVE MOUNTINGS — Whatever you prefer! Drawings below show complete selection.



Top Mounted



Surface Mounted



Recess Mounted



End Mounted



Triangular

One piece, die-formed, hinged Face Plates: All glass or cut out metal letters with glass behind.

ASK FOR COMPLETE NEW "EXIT" CATALOG

I. B. E. W.
Union made
and wired



LIGHTING
since 1902

brascolite

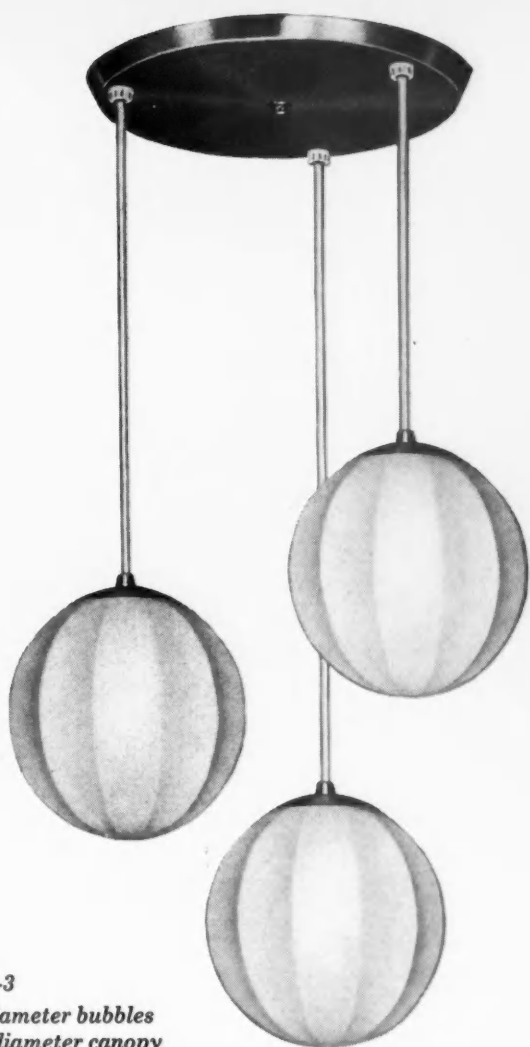
2615 Washington Blvd., Box 7079, St. Louis 77, Mo.

Wanted: Manuscripts

The editors of **Lighting** will welcome contributions from the field for publication. Electrical contractors, lighting consultants, electric utility lighting engineers, and others closely associated with the lighting industry are invited to submit articles, photographs, and drawings relating to important lighting installations and developments anywhere in the United States. All articles will be given careful consideration and payment will be made promptly for all material accepted for publication. Write for your copy of **Lighting's "Author's Guide."** Address all communications to

**Editor, Lighting
Magazine**

1760 Peachtree Rd., N.W.
Atlanta 9, Ga.



6608-3
8" diameter bubbles
13" diameter canopy
3 lights - 100w. each

Bubble - Glass Ball



K6608
wall bracket. 14" length,
11" projection. 8" diameter,
1 light - 100w.



6612
12" diameter
1 light - 200w.

6610
10" diameter
1 light - 150w.

a most dramatic...
most unusual...
most beautiful...
most saleable

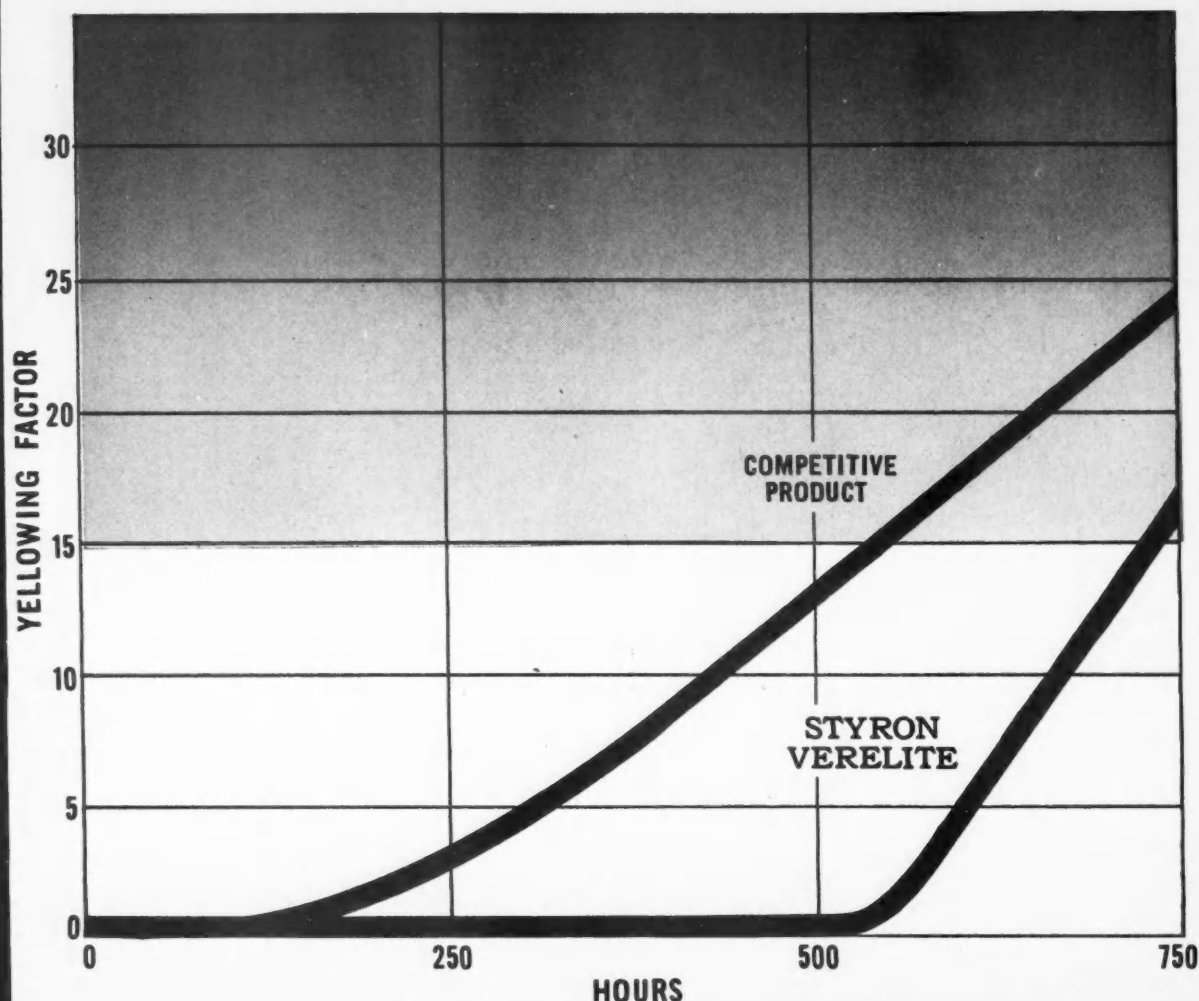
NEW GLASS FORM

many variations available
...delivery now!!!



EJS LIGHTING CORPORATION
921 EAST PICO BOULEVARD / LOS ANGELES 21, CALIFORNIA

union made by I.B.E.W. / U.L. and CSA approved



TESTS PROVE STYRON VERELITE 374 RESISTS YELLOWING 40% LONGER!

Fadeometer tests confirm Styron® Verelite® 374 plastic has ultraviolet resistance unmatched by any other medium impact, light stabilized polystyrene.

Despite 500 hours' exposure to ultraviolet radiation and heat, Verelite 374, with its unique two-stage light stabilizing system, evidenced no significant yellowing . . . far exceeded the test criteria established by the IES-SPI-NEMA.

Verelite 374 offers other demonstrable advantages . . . exceptional processability, good mechanical and

physical characteristics, and consistently uniform product color.

Verelite 374 is recommended for light diffusers where strength and color stability are critical considerations, promotional indoor and outdoor sign applications, and decorative room dividers.

For complete details on the many technical and sales advantages of Styron Verelite 374, contact your nearest Dow Sales Office or write us in Midland, c/o Plastics Sales Department 1706KH11.

THE DOW CHEMICAL COMPANY



Midland, Michigan

**CLOCKWORK
PRECISION...
THE HEART
OF EVERY
NORD
PULLEY**



This is a Junghans spring. It is the product of one of the world's most famous clock factories, and is made of the same fine materials, and with the same quality controls as the renowned Junghans clocks and watches.

Because this spring never tires, never fails . . . because all parts are precision-engineered throughout . . . the Nord pulley works smoothly and dependably, is always trouble-free. Its superior, time-tested performance has made it the best known and most widely used pulley in the industry.

Fully guaranteed, meets *U/L, CSA* specifications.

NORD

NORD-NEW YORK, INC. • ONE CENTRAL AVENUE, TARRYTOWN, N. Y. • MEDFORD 1-7200

JEANNETTE'S UP!



The recent acquisition of McKee Glass highlights big doings at Jeannette Glass Co.! *Jeannette's Up!*
↑UP with a doubled line of merchandise, including GLASBAKE ovenware, giftware and premium ware.
↑UP with a new one-source service for all your glassware needs. **↑UP** with real news-makers in tumbler designs, hot premium items, gift merchandise and powerful merchandising displays. Everything's up at Jeannette—except the prices! What's up for you? Profits! Ask your Jeannette sales representative to call. **Jeannette-McKee Glass Company, Jeannette, Pennsylvania.**

JEANNETTE'S UP

NEW NEW NEW NEW NEW NEW NEW

SINKO

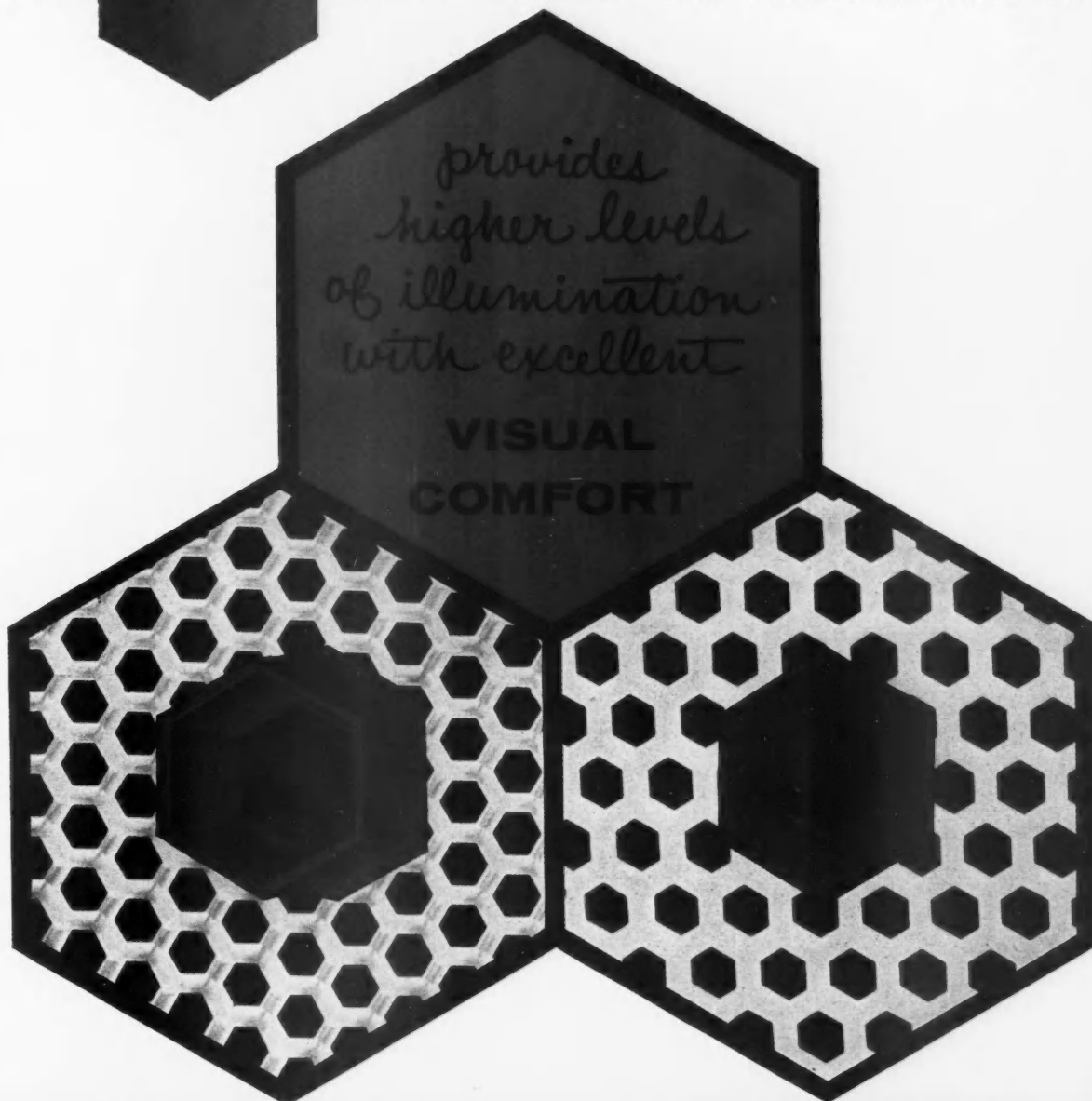


PARAHEX*

LOUVERS' New Parabolic Construction

*provides
higher levels
of illumination
with excellent*

**VISUAL
COMFORT**



Bottom View of PARAHEX Louver

Top View of PARAHEX Louver

When the PARAHEX Louver is used in its metalized finish and is installed in fixtures and/or luminous ceilings, it controls the lamp brightness so well that it is sometimes difficult to distinguish whether or not the lamps are actually lighted — yet the PARAHEX Louver may be providing a maximum of illumination levels.

The new PARAHEX Louver offers new applications in lighting design and adds new functional beauty to lighting installations.

Not only is the PARAHEX a new advancement in lighting

comfort, but it is also an outstanding achievement in the field of plastic molding. In the PARAHEX, Sinko has again proven its ability to meet the challenge of molding the unusual.

PARAHEX Louvers are available in one piece, nominal 2 ft. by 4 ft. panels, in either translucent white Polystyrene, specular and satin aluminum vacuum plated metalized finishes, and in Acrylic, either translucent white or crystal clear. PARAHEX cell dimensions are 1/2" high x 3/8" x 9/16" with 45° x 45° shielding.

We invite you to write today for design samples and engineering data sheets.



SINKO MANUFACTURING & TOOL CO.
7310 W. Wilson Avenue • Chicago 31, Illinois

In Canada:

Sinko Manufacturing & Tool Co. of Canada, Ltd. 3550 Frobisher Street, Montreal, Quebec

*Manufactured under License from General Electric Company Pat. No. 2971083

s Up!
ware.
n tum-
hing's
ntative

P

1961

Your lighting projects require the *safest* fluorescent ballasts you can specify . . . General Electric Bonus Line*. These ballasts are designed to protect against leaking, smoking, burning—all potential hazards or annoyances at end of life. They feature a unique, non-resetting thermal protection system—better than the best fusing—for unmatched, incident-free operation throughout their full, useful life. Put the fullest measure of lighting protection into your buildings. Write premium-quality General Electric Bonus Line ballasts into your lighting specifications.

*Trade-mark of General Electric Company

Progress Is Our Most Important Product

GENERAL  ELECTRIC

For a detailed engineering report on Bonus Line ballasts, contact your G-E Sales Engineer or write Section 403-03, General Electric Company, Danville, Illinois.



Support
contact
write
electric



MODEL HD-600

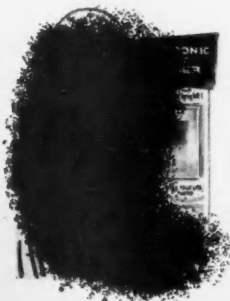
For incandescent lighting only,
up to 600 W

\$28²⁵
LIST

MODEL HD-1000

For incandescent lighting only, up
to 1000 W (requires 2-gang box)

\$57⁷⁵
LIST



**SELF-DEMONSTRATING
COUNTER DISPLAY!**

Now available! Full color dimensional
display lets your customers
demonstrate to themselves how
the Halo DIALITE works.

NEW FROM HALO

dialite
Trademark

ELECTRONIC LIGHT DIMMER

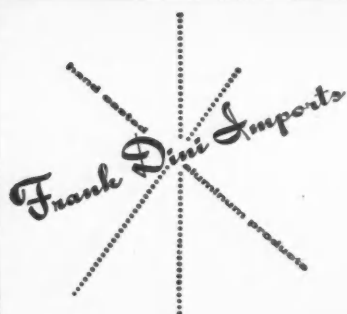
**Now...low-cost, economical, full-range dimming.
Replaces present light switch in minutes!**

At last! A break-through in dimming control design that puts this dramatic way to enjoy the many moods of light well within the reach of millions of homes, offices and businesses everywhere! The new Halo DIALITE is so compact, the entire unit easily fits into any regular single wallbox. Easy to install, too—it wires like any common two-way switch. Halo DIALITE offers complete full-range control—dial any light mood—from dark through 100% bright. Economical, DIALITE reduces the amount of electricity used as the light is dimmed, no wasted current. And just check the low, low price! Give you ideas? Get Halo DIALITE and make these ideas pay off!

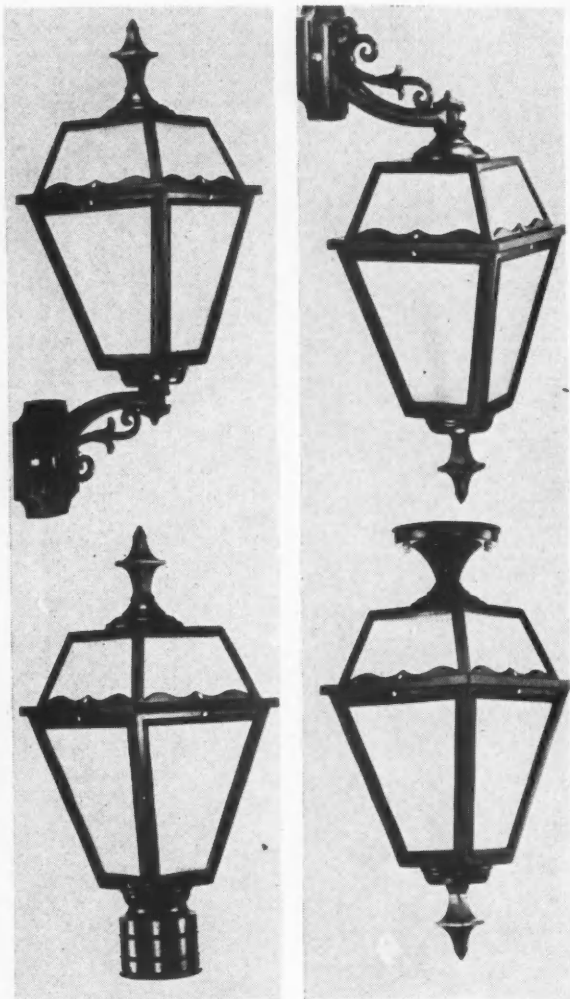
dialite another fine lighting product by

HALO LIGHTING PRODUCTS, INC. 4201 W. Grand Ave., Chicago 51, Ill.





*Elegant
New
300
Series*



All cast aluminum fixtures

Top: Left to right, #303, #304

Bottom: Left to right, #300, #301

Add beauty to your home with these Colonial Style pieces. Color, style and beauty are the essentials to compliment your present decor! New pebble finish, lucite panels, 19" high, 8" wide. Finish: Italian white, satin black, Swedish and antique copper.

Write for our catalog.

**FRANK DINI CO
ROUTE 17, LODI, N. J.
HUBBARD 7-6305**

CATALOGS & BULLETINS

**Available free to readers
of Lighting upon request**

DEL-VAL HOME FIXTURES—A portfolio describing fixtures for the home is available from Del-Val Manufacturing Co., 519 W. Huntingdon St., Philadelphia 33, Pa. Described are fixtures for every room, plus lanterns, exit lights, swivels, pulleys, etc.

Write No. A-101 on reply card, page 21

MINUTE-MOUNT FIXTURES—A catalog of budget lighting fixtures has been issued by Minute-Mount, a division of Progress Manufacturing Co., Castor Avenue and Tulip St., Philadelphia 34, Pa. The 16-page booklet contains color illustrations of a wide range of fixtures.

Write No. A-102 on reply card, page 21

UNION WEATHERBEST FIXTURES—Union Insulating Co., Parkersburg, W. Va., has issued a four-page bulletin describing and illustrating Weatherbest outdoor fixtures, which are available with a lustrous finish in textured brass or aluminum.

Write No. A-103 on reply card, page 21

SHEFFIELD PLASTIC DIFFUSERS—A pocket folder of several data sheets for plastic diffusers is available from Sheffield Plastics, Inc., Sheffield, Mass. The data sheets describe and illustrate various applications of plastic for fluorescent diffusers, etc.

Write No. A-104 on reply card, page 21

VIRDEN DYNAMICS LINE—A 20-page, full color catalog describes the new Virden Dynamics line of incandescent fixtures designed for offices, lobbies, lounges, motels, restaurants, etc., and is available from Lighting Dynamics, 6103 Longfellow Ave., Cleveland 3, Ohio.

Write No. A-105 on reply card, page 21

E-LITE IMPORTED FIXTURES—E-lite Company, Inc., 111 W. 22nd St., New York 11, N. Y., has issued catalog F-21, a 72-page publication showing imported crystal, bronze, and wrought iron fixtures, wall brackets, and hall lights.

Write No. A-107 on reply card, page 21

HOLOPHANE BANK LIGHTING—Holophane Co., Inc., 342 Madison Ave., New York 17, N. Y., has issued a new brochure on bank lighting, which contains photographs taken of nine different installations. The Holophane consulting service is discussed.

Write No. A-109 on reply card, page 21

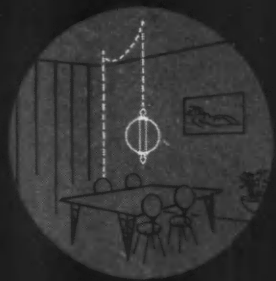
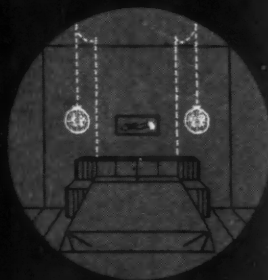
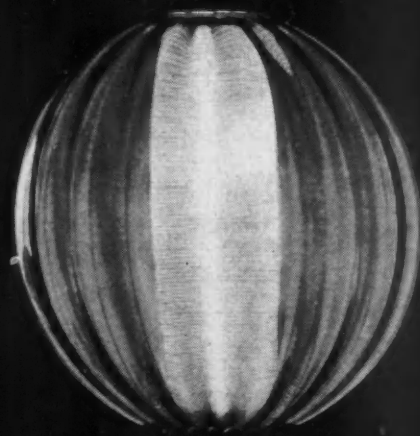
FLUORESCENT AND INCANDESCENT FIXTURES—Numerous booklets covering commercial, residential, and industrial lighting fixtures are included in a new illustrated catalog from L&P Lighting, P.O. Box 157, Olive Branch, Miss.

Write No. A-110 on reply card, page 21

G-E BALLASTS—A detailed engineering report on Bonus Line ballasts is now being offered from General Electric Co., Section 403-03, Danville, Ill. Those ballasts discussed are designed to protect against leaking, smoking, and burning.

Write No. A-111 on reply card, page 21

SWAG-LITE



"SWAG-LITE"... an exciting new advance in lighting elegance, a portable ceiling fixture that is adaptable to all areas, simple to hang, just plug in to any outlet. Presented in a full range of decorator styles spanning provincial to contemporary, the portable "Swag-Lite" is quality produced by Lightcraft of California at moderate prices for volume sales. To guarantee distributors a full share of this newly created market, Lightcraft of California has designed a unique full-color "Swag-Lite" floor display unit. This invaluable merchandising display, available free, will be included with your first shipment. Qualified distributors are invited to write for additional information.



1600 WEST SLAUSON AVENUE
LOS ANGELES 47, CALIFORNIA

LIGHTCRAFT OF CALIFORNIA

New findings verify benefits of Fiberglas Polarizing Light Panels



Fiberglas Polarizing Light Panels are lightweight, easy to handle, and easy to install. They are dimensionally stable and are available in sizes up to 24" x 48".

Recent tests conducted by Dr. Blackwell of Ohio State University, and reported before the National Technical Conference of the Illuminating Engineers Society, proved that polarization:

- Virtually eliminates reflected and direct glare
- Reduces veiling glare substantially
- Improves color definition dramatically
- Improves visual performance and task visibility to a startling extent over nonpolarized light at equal candle power.

These findings demonstrate that polarization can increase the usefulness of light without increasing foot-candle power. Polarization converts ordinary lighting energy into energy that actually increases task contrasts and, as a result, improves visual performance.

Although the precise measurement is new, Fiberglas Polarizing Light Panels have been providing such benefits for two years in buildings throughout the United States. When you specify light fixtures, make sure they contain Fiberglas* Polarizing Light Panels to provide the advantages of this new dimension in lighting.

WRITE FOR NEW LITERATURE TODAY. The address is: Owens-Corning Fiberglas Corporation, Dept. MD, 717 Fifth Ave., New York 22, N. Y.

OWENS-CORNING RESEARCH pioneers new ideas in

OWENS-CORNING
FIBERGLAS

*T.M. (Reg. U.S. Pat. Off.) O-C. F. Corp.

Take the

SURGE

out of mercury-lamp starting

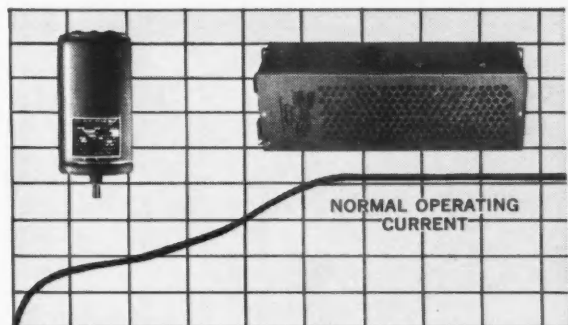
WITH SOLA CONSTANT-WATTAGE BALLASTS

Full rated lamp life . . . more lamps per circuit . . . less costly wiring: These across-the-board SOLA savings reduce installation costs, assure longer lamp life expectancy and less maintenance. And all are direct results of SOLA constant-wattage mercury-lamp ballast design!

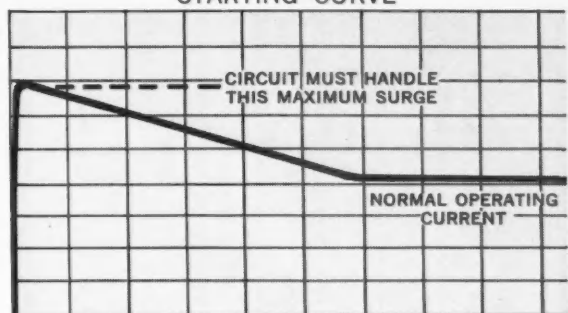
Self-limiting action of constant wattage ballasts takes power-surges out of lamp starting, automatically compensates for line fluctuations. Parallel 2-lamp models operate lamps independently of each other and keep good lamp shining steadily even after mate burns out. Complete range of types for indoor as well as outdoor applications.

SOLA *constant-wattage* holds lumen output within $\pm 1\%$ for line-voltage changes as great as $\pm 13\%$. "Drop-out" is virtually nil, since input voltage must fall 30% below nominal before lamp extinguishes. SOLA M-L ballasts are also inherently self-protecting against open and shorted lamps.

Available for 115, 208, 230, 277, 460 and 575-volt input. Get full details from your SOLA supplier, or write us for information, specifying M-L indoor or outdoor type ballast.



SOLA CONSTANT WATTAGE
STARTING CURVE



HIGH-REACTANCE BALLAST
STARTING CURVE

SOLA

A DIVISION OF



SOLA ELECTRIC CO.
1717 Busse Road
Elk Grove Village, Ill.
HEmpstead 9-2800
IN CANADA, Sola-Basic
Products Ltd., 377 Evans
Ave., Toronto 18, Ontario

BASIC PRODUCTS CORPORATION

S-34-81



Illus. Cat. No. B-103-Y
3-arm teak spreader
with three "Y" style
2-piece glass shades.



Illus. Cat. No. B-105-U
5-arm teak spreader
with five "U" style
glass shades.

PRESCOLITE'S EXCITING NEW

Holiday

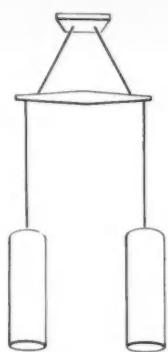
PENDANTS

A gay and colorful grouping of pendant forms designed and executed in hand-blown combinations of colored glass as well as exquisite satin opal glass. Metal shades come in striking baked enamel finishes set off with lustrous brass accents. All shades are suspended by white plastic cords, and are designed for mounting on 3¼" or 4" outlet boxes. Teak spreaders are of pure Bangkok Teak with hand-rubbed satin cabinet finish. You can create multiple combinations of forms and colors and stagger the heights to form focal points of interest for any interior. Write for complete catalog information.

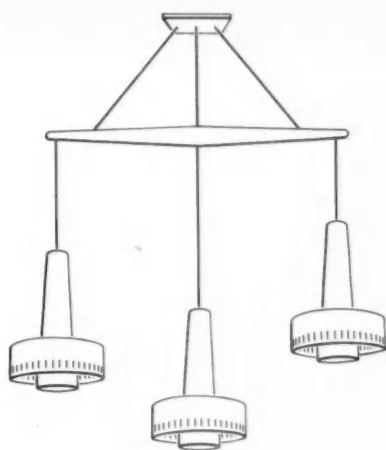
PRESCOLITE MANUFACTURING CORPORATION
2229 Fourth Street, Berkeley 10, California



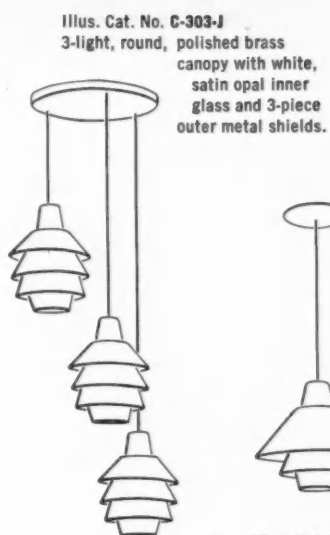
P
PRESCOLITE



Illus. Cat. No. S-202-O
2-light teak spreader
with two "O" style
glass shades.



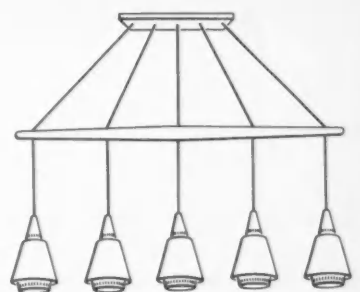
Illus. Cat. No. S-203-K
3-light teak spreader with three
2-piece "K" style shades.
White satin opal inner
glass, metal outer shades.



Illus. Cat. No. C-303-J
3-light, round, polished brass
canopy with white,
satin opal inner
glass and 3-piece
outer metal shields.



Illus. Cat. No. A-101-F
Single canopy, white
satin opal inner glass
and 2-piece outer metal
shields.



Illus. Cat. No. S-205-R
Rectangular metal canopy,
5-light teak spreader
with metal shades
finished in baked enamel
and polished brass.

portable lighting

**DESIGNED FOR
PROFIT—
PRICED TO
SELL!**

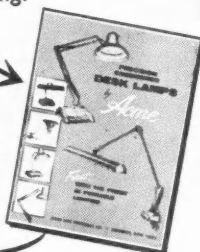


DUALITE
Model 22-G

**OVER 30
FAST SELLING
DESIGNS**

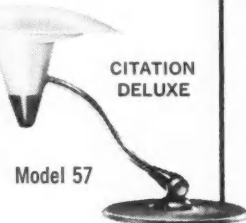
The completeness of the ACME line enables you to offer portable lighting for office, industry and home. ACME's portable lamps are carefully designed for the best possible lighting characteristics and are skillfully manufactured to assure customer satisfaction and repeat sales. **SELL MORE . . . EARN MORE** with ACME Portable Lighting.

Write for
new 1961
catalog and
discount
information



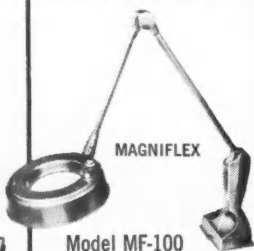
Model 404-G

U.S. PATENT NO. 2,665,870



CITATION
DELUXE

Model 57



MAGNIFLEX

Model MF-100



Model 2002



A-20

JAY INCANDESCENT FIXTURES — Jay Lighting Manufacturing Co., 5 E. 35th St., New York, N. Y., has just issued a 12-page supplement that illustrates and describes the newest additions to the hand-crafted Coronet series of incandescent fixtures.

Write No. A-302 on reply card, page 21

PUSHNUT FASTENERS—Assorted bulletins describe and illustrate the line of spring steel Pushnut fasteners which are pushed on unthreaded studs, rod, or wire. This material is available from the Palnut Co., 71 Glen Rd., Mountainside, N. J.

Write No. A-303 on reply card, page 21

SYLVANIA FLUORESCENT FIXTURES—A complete brochure (V-602A) covers broad line of commercial and industrial lighting fixtures, recessed shallow troffers, and air-handling troffers from Sylvania Electric Products, Inc., 1 48th St., Wheeling, W. Va.

Write No. A-304 on reply card, page 21

SARNA LANTERNS FROM INDIA — S. S. Sarna, Inc., 39 W. 19th St., New York, N. Y., has a 95-page catalog showing line of brass lanterns and accessories. All types are available, including drop pendants, wall and ceiling pulleys, chandeliers, and pole types.

Write No. A-305 on reply card, page 21

KIRLIN RECESSED FIXTURES—Catalog No. 79, from the Kirlin Co., 3435 E. Jefferson, Detroit 7, Mich., gives complete information on recessed fixtures, both incandescent and fluorescent. Rapid estimate charts are included to calculate intensities quickly.

Write No. A-306 on reply card, page 21

ANGELO LAMP AND FIXTURE PARTS—Catalog No. 8, which is available from Angelo Brothers Co., 23333 N. Mascher St., Philadelphia 33, Pa., contains a supplement and ten flyer sheets on new items plus net prices of all listed parts.

Write No. A-308 on reply card, page 21

BENJAMIN INDUSTRIAL UNITS — Lighting units for industrial assembly, sign boards, and gymnasiums are a few of the many units in the new industrial incandescent catalog published by Benjamin Div., Thomas Industries, Inc., 207 E. Broadway, Louisville, Ky.

Write No. A-310 on reply card, page 21

FRINK DOWNLIGHTS—A new line of incandescent downlights created for Westinghouse by the Frink Corp., 211-63rd St., Brooklyn 20, N.Y., is covered in a 12-page catalog, which includes round, square, eyeball, and low-brightness-aperture styles.

Write No. A-311 on reply card, page 21

MOE RECESSED HOUSING—An illustrated brochure now available from Moe Light Div., Thomas Industries, Inc., 207 E. Broadway, Louisville 2, Ky., gives complete data on Adjust-All round recessed fixture housing. Trims are also included.

Write No. A-312 on reply card, page 21

HARTWELL LATCHES—Lighting fixture latches, designed to replace ordinary latches, captive screws, stud fasteners, and spring clips, are described in literature now offered by the Hartwell Corp., 9035 Venice Bldg., Los Angeles 34, Calif.

Write No. A-313 on reply card, page 21

INFORMATION CENTER



**Help yourself to free literature
and more details on any prod-
uct mentioned in this issue.**

Instead of writing a dozen different manufacturers for free literature and more information on products, or services, just insert on the cards below the appropriate key numbers of the items in which you are interested. These cards may be used to get information on products mentioned in the following departments (see Contents Page for page number):

CATALOGS — NEW PRODUCTS — BULLETINS — ADVERTISEMENTS

**Be sure to print or write legibly your name and address—
drop it in the nearest mail box and**

Lighting pays the postage!

NOVEMBER, 1961

Send free information on these **NEW PRODUCTS** and/or services (fill in key numbers):

.....
.....
.....

Send this **FREE LITERATURE** (fill in key numbers):

.....
.....
.....

Send free information on these **ADVERTISEMENTS**:

Company.....	Page.....	Company.....	Page.....
Company.....	Page.....	Company.....	Page.....

My Name Position

My Company's Name

Address (number and street)

City Zone State

NOVEMBER, 1961

Send free information on these **NEW PRODUCTS** and/or services (fill in key numbers):

.....
.....
.....

Send this **FREE LITERATURE** (fill in key numbers):

.....
.....
.....

Send free information on these **ADVERTISEMENTS**:

Company.....	Page.....	Company.....	Page.....
Company.....	Page.....	Company.....	Page.....

My Name Position

My Company's Name

Address (number and street)

City Zone State

**These cards
can help
you get
valuable
information**



Postage
Will be Paid
by
Addressee

No Postage
Stamp Necessary
If Mailed
in the
United States

BUSINESS REPLY CARD

FIRST CLASS PERMIT NO. 582, SEC. 34.9, P. L. & R., ATLANTA, GA.

Lighting

1760 PEACHTREE ROAD, N. W.
ATLANTA 9, GEORGIA



Postage
Will be Paid
by
Addressee

No Postage
Stamp Necessary
If Mailed
in the
United States

BUSINESS REPLY CARD

FIRST CLASS PERMIT NO. 582, SEC. 34.9, P. L. & R., ATLANTA, GA.

Lighting

1760 PEACHTREE ROAD, N. W.
ATLANTA 9, GEORGIA



VIRDEN BUDGET LIGHTING FIXTURES—Over 130 different Scotch Plaid fixtures are illustrated and fully described in a 16-page catalog available from Virden Lighting, John C. Virden Co., 5209 Euclid Ave., Cleveland 3, Ohio. All types of fixtures are shown.

Write No. A-401 on reply card, page 21

MAJOR STAGE LIGHTING—Major Equipment Co., Inc., 4603 W. Fullerton Ave., Chicago 39, Ill., is making available their latest and most complete catalog of stage lighting and associated control equipment. Lines of various type lights are featured.

Write No. A-402 on reply card, page 21

E-LITE GLASSWARE—E-lite Company, Inc., 111 W. 22nd St., New York 11, N. Y., has published an 18-page bulletin on lighting glassware, catalog No. 60. The bulletin describes chimneys, hurricane shades, and replacement glassware of all kinds.

Write No. A-403 on reply card, page 21

MEIERJOHAN-WENGLER LIGHTING—A catalog showing fixtures, lanterns, and standards in contemporary and traditional designs custom fabricated in various metals is available from Meierjohan-Wengler, Metalcraftsmen, 1102 W. 9th St., Cincinnati 3, Ohio.

Write No. A-404 on reply card, page 21

GILL DECORATIVE FIXTURES—Gill Glass and Fixture Co., Inc., Philadelphia 34, Pa., has issued an illustrated 20-page catalog, "Gallery of Lighting Inspirations," featuring an exclusive handcrafted collection of lighting fixtures inspired by the Great Masters.

Write No. A-406 on reply card, page 21

KOPP LIGHTING SERVICE—A 20-page brochure, bulletin 760, describing the Kopp glass engineering and manufacturing service from application analysis and formula development through mold design and production, is available from Kopp Glass, Inc., Swissvale, Pa.

Write No. A-407 on reply card, page 21

ULTRA-VIOLET LAMPS—Black light inspection of printed circuit boards, gear trains, etc., is described in detail in new literature available from Ultra-Violet Products, Inc., San Gabriel, Calif., manufacturer of Blak-Ray black light lamps.

Write No. A-409 on reply card, page 21

GARCY 12-FOOT FIXTURES—A brochure from Garcy Lighting, Chicago 47, Ill., describes guaranteed labor savings with 12-foot speed-line fixtures for schools and offices. Specifications and details are covered along with copy of labor saving guarantee from Garcy.

Write No. A-410 on reply card, page 21

KEYSTONE FLUORESCENTS—A loose-leaf illustrated catalog now available from Keystone Electric Manufacturing Co., 2228 East Tioga St., Philadelphia 34, Penn., covers shielded and unshielded commercial fixtures, recessed troffers, and industrial fixtures.

Write No. A-411 on reply card, page 21

ATI GIMBAL RINGS—Cadmium plate Gimbal rings for various size lamps, with both side prong and screw type bases, are included in detailed literature which is available from Alexander-Tagg Industries, Inc., Hatboro, Pa.

Write No. A-412 on reply card, page 21

Monterrey

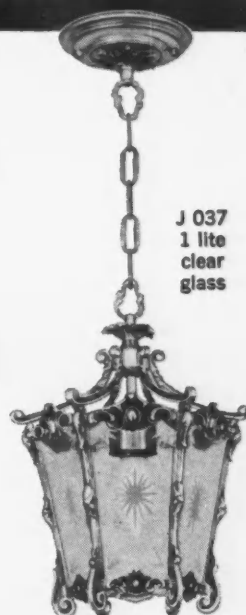
INDOOR LANTERNS

by JAY

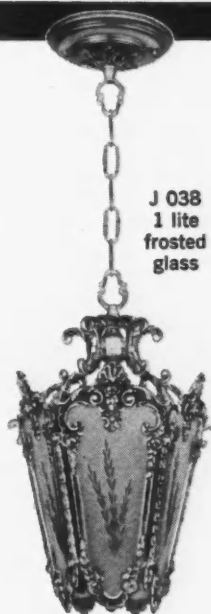
...an old fashion
that is forever new!

Cast brass and wheel cut glass panels are skillfully combined to achieve new beauty for the functional hall and foyer fixture. These are hand-rubbed to an antique finish. Immediate deliveries.

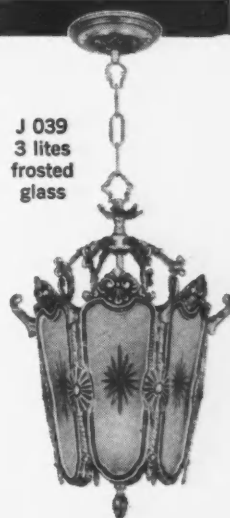
J 037
1 lite
clear
glass



J 038
1 lite
frosted
glass



J 039
3 lites
frosted
glass



Send for new
literature—
Dept. L1160
or visit our
Showrooms



JAY LIGHTING MFG. CO., Inc.

New Showrooms: 5 East 35th Street, New York 16

Creators of the luxurious hand-crafted Coronet Series—the resplendent Parasol Series—the unusual brass and walnut Anzac Group—the distinctive torch-type Concord Series—Roundabouts—and VISORlite, the dramatic wall lighting sensation.

DISTRIBUTORS IN PRINCIPAL CITIES

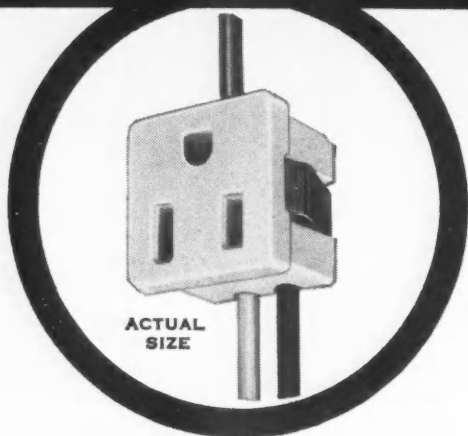
MINIATURE BI-PIN FLUORESCENT LAMPHOLDER

FOR T-5 LAMPS. 4, 6, 8, AND 13 WATTS

Can be quickly mounted in smallest possible space with single screw with various brackets when flush and surface mounting is desired; or as butt-on mounting without brackets. Rated at 75W. — 250V. Cat. No. 9240-2



CIRCLE F MINIATURES



MINIATURE "U" GROUND SNAP-IN OUTLET

For that limited space application. Mounts in less than one square inch. Rated at 15 Amp — 125V. wire leads only. Strong spring steel mounting clip for materials .025" to .095" thick. Cat. No. 1540

Take advantage of the new Circle F Miniature devices. Practical, attractive, low priced



CIRCLE F MFG. CO.
TRENTON 4, NEW JERSEY

APPLETON VAPORTIGHT FIXTURES—Appleton Electric Co., 1701 Wellington Ave., Chicago 13, Ill., is re-issuing their 20-page bulletin 5-A. Detailed descriptions and dimensional data for the V-51 series convertible vaportight lighting fixtures are included.

Write No. A-701 on reply card, page 21

PURITAN TEXTURED GLASS—Puritan Lighting Fixture Co., 21-25 Boerum St., Brooklyn, N.Y., has introduced a new line of residential fixtures to celebrate its 36th anniversary, and the line is described in their illustrated "Fabulous Textured Glass" brochure.

Write No. A-703 on reply card, page 21

STONCO BRACKETS AND FIXTURES — Stonco Electric Products Co., Kenilworth, N.J., has issued catalog PB61 illustrating their new line of completely weatherproof prismatic wall brackets and ceiling fixtures for all exteriors requiring clean styling.

Write No. A-704 on reply card, page 21

WESTINGHOUSE LIGHTING — A new booklet, "Lighting for Merchandising," is now available from the Westinghouse Electric Corp., Lighting Div., Edgewater Park, Cleveland, Ohio. The eight-page booklet has many examples of high quality lighting.

Write No. A-705 on reply card, page 21

H. G. METALS SWIVELS—H. G. Metals, Inc., 1355 Atlantic Ave., Brooklyn, N.Y., has available a complete catalog on the company's line of one-piece solid brass swivels, all of which are UL approved, and are obtainable with lacquered polish finish.

Write No. A-706 on reply card, page 21

HOWARD MILLER FIXTURES—Two- and four-page catalogs illustrate the famous bubble and net lights and bubble cluster fixtures designed by George Nelson for the Howard Miller Clock Co., Zeeland, Mich. The catalogs specify dimensions, price, and finish.

Write No. A-707 on reply card, page 21

MIROFLECTOR STANDARDS — Miroflector Co., Inc., Inwood 96, N.Y., is offering a catalog containing a complete program for all incandescent fixture needs. It contains over 100 pages and has over 1,000 new applications of architectural specials and standards.

Write No. A-708 on reply card, page 21

DURO-LITE BULBS—A four-page booklet describes the Flourescent bulbs made by Duro-Lite Lamps, Inc., 2321 Hudson Blvd., North Bergen, N.J. These long-life decorative bulbs feature a gas-like flame, and can be burned outdoors in any type weather.

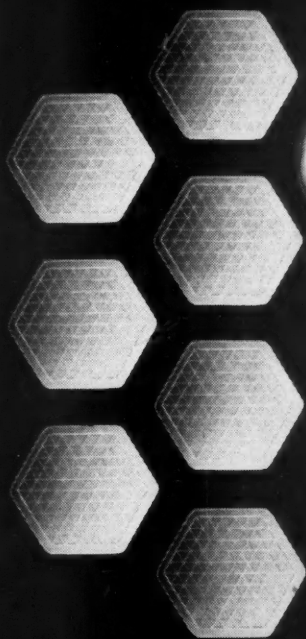
Write No. A-709 on reply card, page 21

ROTUBA EXTRUSIONS—Rotuba Extruders, Inc., 437 88th St., Brooklyn 9, N.Y., has published a 22- by 28½-inch double-sheeted, pamphlet-like brochure, depicting almost 200 of their custom-designed and standard rigid die shape extrusions used to control light.

Write No. A-710 on reply card, page 21

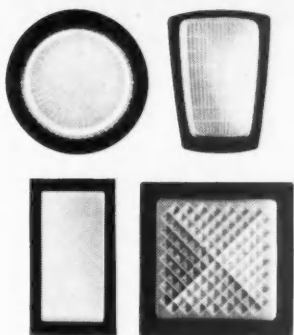
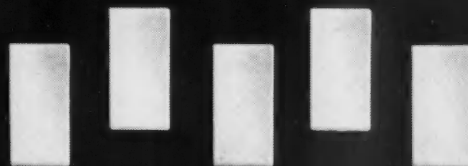
SHELDON METAL PARTS—A comprehensive portfolio of more than 100 spinning and stamping products has recently been prepared by Sheldon Metal Products Co., Inc., 18 Martine St., Fall River, Mass. Ordering data and specifications are included.

Write No. A-711 on reply card, page 21



A NEW VISUAL EXPRESSION

in incandescent lighting



Glowing geometric shapes combine the beauty of soft satin handblown glass with all-aluminum construction to provide an unusual combination of decorative effects limited only by the imagination of the designer. **light-forms** can be used individually or in combinations of alignment to create patterns of light that become an integral part of the architecture.

Designed for wall use only, **light-forms** may be used on either interiors or exteriors.

PATS. APPLIED FOR

Write for Catalog LF-1 or refer to Sweets Catalog File



PRESCOLITE MANUFACTURING CORPORATION

2229 Fourth Street, Berkeley 10, California

FACTORIES: Berkeley, California • Warrington, Pennsylvania • El Dorado, Arkansas

Geri, the Geringer Gal Sez:

**"LET'S THROW
SOME LIGHT ON
THE CRAZY
FIXTURE BUSINESS!"**



There is a difference in lighting fixtures—and that difference is summed up in one vital word—saleability! Geringer fixtures *sell*! From years of experience we combine the basic ingredients of superb workmanship, unusual styling, finest materials and attractive prices to produce a recipe that stirs up sales. Geringer dealers and jobbers are top men in their territory—because they sell a *better* product at a *better* price and make a *better* profit. The welcome mat is out for you to join the Geringer family today. Write for our new 88 page full color catalog!

Illustrated: No. 270-FD. Our new 9" glass ball unit with delicate floral spray decoration in color. Also available in pulley. Retail at about \$39.00.

GERINGER
L I G H T I N G
GERINGER & SONS MFG. CORP.

Factory & Offices: Peekskill, New York

MORDA DISPLAY SPOT—The line of art Beam-Lites now designed to illuminate exhibits, paintings, etc., is covered with ordering data and prices in a catalog available from Morda Distributing Co., Dept. L-10, P. O. Box 24036, Los Angeles 24, Calif.

Write No. A-901 on reply card, page 21

TRIBORO LIGHTING RECEPTACLES — Various models of recessed lighting receptacles with snap-in springs are described in detail in the catalog now available from Triboro Electric Corp., Waterbury and Ten Eyck Sts., Brooklyn 6, N. Y.

Write No. A-902 on reply card, page 21

BENJAMIN AIR-FLOW TROFFERS—The new 40-page Lumi-Flo manual describing air-handling troffers has been announced by Benjamin Div., Thomas Industries, Inc., 207 E. Broadway, Louisville 2, Ky. The booklet is complete with illustrations.

Write No. A-903 on reply card, page 21

METAL STAMPING LANTERNS — Brass, aluminum, and copper lanterns from the Charles Richter collection are described and shown in the new lantern catalog now offered by Metal Stamping and Spinning Corp., 160 E. First St., Mount Vernon, N. Y.

Write No. A-904 on reply card, page 21

PRESCOLITE COLOR PENDANTS — Numerous groupings of colorful pendants and satin opal glass fixtures are illustrated and described in a lighting catalog available from Prescolite Manufacturing Corp., 2229 Fourth St., Berkeley 10, Calif.

Write No. A-905 on reply card, page 21

ACME DESK LAMPS—New designs in desk lamps are described and illustrated in the new catalog and discount information available from Acme Lite Products Co., Inc., Congers, N. Y. Included are facts on the magnifying fluorescents.

Write No. A-906 on reply card, page 21

WARD LIGHTING SWIVELS — A brochure now available from Ward Engineering, Inc., 6439 San Fernando Rd., Glendale 1, Calif., describes the automatically smooth tension action of Ward swivels. Specifications and ordering data are included.

Write No. A-907 on reply card, page 21

RUBY ANTIQUE REPRODUCTIONS—A 68-page catalog now available from the Ruby Co., 129 W. 27th St., New York, N. Y., illustrates in color the early American and other antique fixtures now reproduced. Ordering information and details are included.

Write No. A-908 on reply card, page 21

CENTURY MOUNTING DEVICES — A brochure covering the Instalite line of engineering lighting mounting equipment from Century Lighting Co., 521 W. 43rd St., New York 36, N. Y., is now available. The line runs from trim plates to junction boxes.

Write No. A-909 on reply card, page 21

LEVITON FIXTURE RECEPTACLES—Snap-in fixture receptacles are described and illustrated in a new catalog available from Leviton Manufacturing Co., Inc., 236 Greenpoint Ave., Brooklyn 22, N. Y. The catalog covers the complete line of snap-in devices.

Write No. A-910 on reply card, page 21

Meet.....THE

STARGLOW

by modern



MEET... THE "STARGLOW"

A DISTINCTIVE NEW FLUORESCENT FIXTURE DEvised TO FILL THE NEED FOR AN ULTRA-LOW PROFILE, RUGGED YET BEAUTIFULLY STYLED UNIT. INTERIOR DESIGNERS AND ARCHITECTS WILL FIND THE TIMELESS SYMMETRY OF LINE AND PROPORTION A HANDSOME COMPLEMENT TO TASTEFUL DECOR AND STRUCTURE WHETHER PERIOD OR MODERN.

LIGHTING ENGINEERS WILL FIND THE EMPLOYED PRINCIPLE OF LARGE AREA - LOW BRIGHTNESS GIVES UNPARALLELED ILLUMINATION QUALITY DESPITE THE MOST DIFFICULT FACTORS.

THE STARGLOW HAS BEEN CLEVERLY CONCEIVED TO GIVE EVERY APPEARANCE OF BEING RECESSED WHILE ACTUALLY SURFACE MOUNTED EITHER SINGLY OR IN LINE WITH NO NEED OF ADAPTERS TO JOIN UNITS. IT IS THE FIRST LUMINAIRE EVER BUILT TO FULLY ELIMINATE END PLATE SHADOWS.

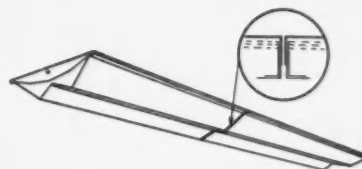
A ONE PIECE POLYSTYRENE DIFFUSER PROVIDES UNMATCHED GLARELESS DIFFUSED LIGHT. SEAMLESS AND FULLY SEALED THE DIFFUSER PROVIDES NO PURCHASE FOR DUST AND DIRT THUS MINIMIZING LIGHT LOSS.

THE ALL WELDED STRUCTURE AND HIGH QUALITY ENAMELED FINISH ASSURE A LONG SERVICEABLE LIFE AT AN EXPENSE LEVEL COMPATIBLE WITH THE MOST MODEST LIGHTING BUDGET.

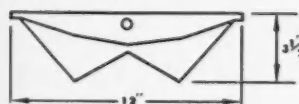
BUT DESCRIPTIONS ARE HARDLY ADEQUATE: YOU SHOULD SEE THE FIXTURE ITSELF. SAMPLES AVAILABLE AT USER'S COST OF

\$18.95

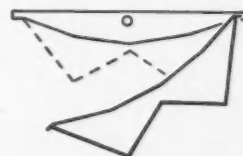
ATTRACTIVE TERRITORIES AVAILABLE FOR QUALIFIED MANUFACTURER'S REPRESENTATIVES



END PLATE CONSTRUCTION PROVIDES VIRTUALLY UNBROKEN ROWS OF GLOWING ILLUMINATION



OVERALL SIZE SHOWS COMPACTNESS AND RECESSED APPEARANCE OF UNIT.



HINGED FROM EITHER SIDE PROVIDES EASY ACCESSIBILITY FOR INSTALLATION OR MAINTENANCE.

USES TWO RAPID START LAMPS

Catalog No. 23 U4-R2K4

MODERN LIGHT COMPANY OF ST. LOUIS
7809 MAPLEWOOD INDUSTRIAL COURT
ST. LOUIS 17, MISSOURI

Gentlemen:

- ☐ Please send sample of Fixture at user's price.
- ☐ Please send illustrated catalog page and design information.

Name _____
Address _____
Position _____
City _____ Zone _____ State _____

modern
LIGHT COMPANY of St. Louis

LIGHTING for NOVEMBER, 1961

For more details on above items, use reply card on page 21.

27



NEW S-R-O

featuring U-all*
... one housing takes
67 front and trim
variations!

* Universal-all Lighting Lenses

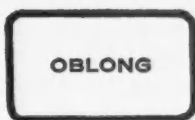
R

SQ

Wri

LIGH

RECESSED LIGHTING BY EMERSON-PRYNE



the new idea line — easier to order, stock, sell!

THESE ADVANTAGES ADD UP TO MORE PROFITS FOR YOU:

YOU'LL LIKE THE SIMPLIFIED NUMBERING SYSTEM — It makes ordering and selling easier. The line is organized in three groups — S, R and O... each group numbered separately. For example: Now you specify *S3-72C* instead of *1000-101C-1*.

And — The SRO line gives you all the “most specified” “over the counter” fixtures. A compact line!

CONTRACTORS LIKE THE EASIER INSTALLATION — S1 (square) and O1 (oblong) come with the new SLIP-STRAP hangers which permit complete fixture installation without nails or screws. Easy-to-use Bar Straps for standard joist spacings go with other models. And — SRO fixtures come wired or unwired.

BUILDERS LIKE THE WAY THEY MAKE LOOK-ALIKE HOMES LOOK DIFFERENT—SRO recessed lighting is as basic as tile, wallpaper and paint... for making interiors “different”. SRO can give builders a competitive edge. That means more business for you!

SRO fixtures are available with chrome, brass, copper or painted finish.

BRAND NEW FULL-COLOR CATALOG—With full-color photos showing ideas on the beautiful and dramatic effects SRO can produce. **ASK FOR YOUR FREE CATALOG!**

MAIL COUPON NOW:



Write Dept. B93, Emerson Electric • 8100 Florissant • St. Louis 36

Emerson Electric • 8100 Florissant • St. Louis 36, Mo.

Please send my free copy of new full-color SRO catalog.

Name

Firm

Address

City State

1 or
1,000,000



every

PALNUT LOCK NUT

is

Dependably Uniform!

- in dimensions
- in spring tension
- in assembly characteristics
- in plating and finishing
- in dependable locking action

PALNUT Lock Nuts are mass-produced in huge volume at low cost on the most modern equipment. Quality is rigidly controlled by inspections at every step of production. Result: Each PALNUT assures your assemblers of precision thread fit—uniform hex shape—easy wrenching—free turning—accurate torquing, to speed up assembly and reduce rejects.

Learn how PALNUT Lock Nuts can cut your assembly costs, reduce fastening parts and assure vibration-proof tightness. Send details of your application for free samples and latest catalog.

THE PALNUT COMPANY, 71 Glen Road, Mountainside, N. J.

DIVISION OF UNITED-CARR FASTENER CORPORATION

Canada: P. L. Robertson Mfg. Co., Ltd., Milton, Ont.



PALNUT® Lock Nuts and Fasteners

Quick, secure fastening at low cost

BERGER PRECISION PARTS—Pipe, swivels, running thread nipples, finals, arms, and other quality components are covered in a catalog available from Berger Machine Products, Inc., 74-16 Grand Ave., Mespeth, New York, N. Y.

Write No. A-1001 on reply card, page 21

LIGHTGUARD AUTOMATIC SWITCH—Complete information and prices on a small but versatile photo-cell light control, which can be installed in existing systems, is available from Electronic Manufacturing Co., Inc., 1213 St. Emanuel St., Houston 3, Texas.

Write No. A-1002 on reply card, page 21

CANDLE FLAME LAMPS—Standard, intermediate, or candelabra bases with candle flame lamps using special carbon filaments are covered in literature and prices now available from North American Electric Lamp Co., 250 Fulton St., New York, N. Y.

Write No. A-1003 on reply card, page 21

STONCO FLOODLAMPS—Sealed-beam mercury vapor floodlights from Stonco Electric Products Co., Kenilworth, N. J., are described in detail in catalog No. MV. The catalog explains the hermetically sealed reflectors and other advantages of this line.

Write No. A-1004 on reply card, page 21

CRESCENT BRASS FIXTURE PARTS—A 48-page catalog now available from Crescent Brass Manufacturing Corp., Seventh, Spruce, and Bingham Sts., Reading, Pa., illustrates and describes lighting fixtures and lamp parts made from cast brass.

Write No. A-1005 on reply card, page 21

MODERN FLUORESCENT—An illustrated catalog giving design information on Starglow W-shaped fluorescent fixtures with the ultra-low profile is now offered by Modern Light Company of St. Louis, 7809 Maplewood Industrial Court, St. Louis 17, Mo.

Write No. A-1006 on reply card, page 21

EMERSON RECESSED LIGHTING—A new full-color SRO catalog from Emerson Electric, Dept. B93, 8100 Florissant, St. Louis 36, Mo., shows and describes recessed fixtures and their effects in various shapes and sizes from the Emerson-Pryne lighting line.

Write No. A-1007 on reply card, page 21

MAJOR REFLECTORS—Alzak aluminum reflectors, ranging in use from indoor lighting to ball park lamps, are covered in the brochure, "Story of Alzak Reflectors," from Major Equipment Co., 4603 Fullerton Ave., Chicago 39, Ill.

Write No. A-1008 on reply card, page 21

MONSANTO LIGHTING LOUVERS—Lustrex permatone lighting louvers, made of ultraviolet light-stabilized styrene, are fully discussed in a comprehensive technical report from Monsanto Chemical Co., Plastics Div., Room 801, Springfield 2, Mass.

Write No. A-1009 on reply card, page 21

MARPLEX FIBERGLASS DIFFUSERS—More than 40 styles of fiberglass diffusers, reflectors, shades, sheets, and cylinders are included in the designers' sheets and price lists offered by the Marplex Co., 348 Washington St., El Segundo, Calif.

Write No. A-1010 on reply card, page 21

, run-
quality
e from
Ave.,

complete
photo-
existing
cturing
exas.

mediate,
ng spe-
re and
Electric

ury va-
s Co.,
catalog
sealed

18-page
anufac-
n Sts.,
fixtures

catalog
ed fluo-
is now
s, 7809

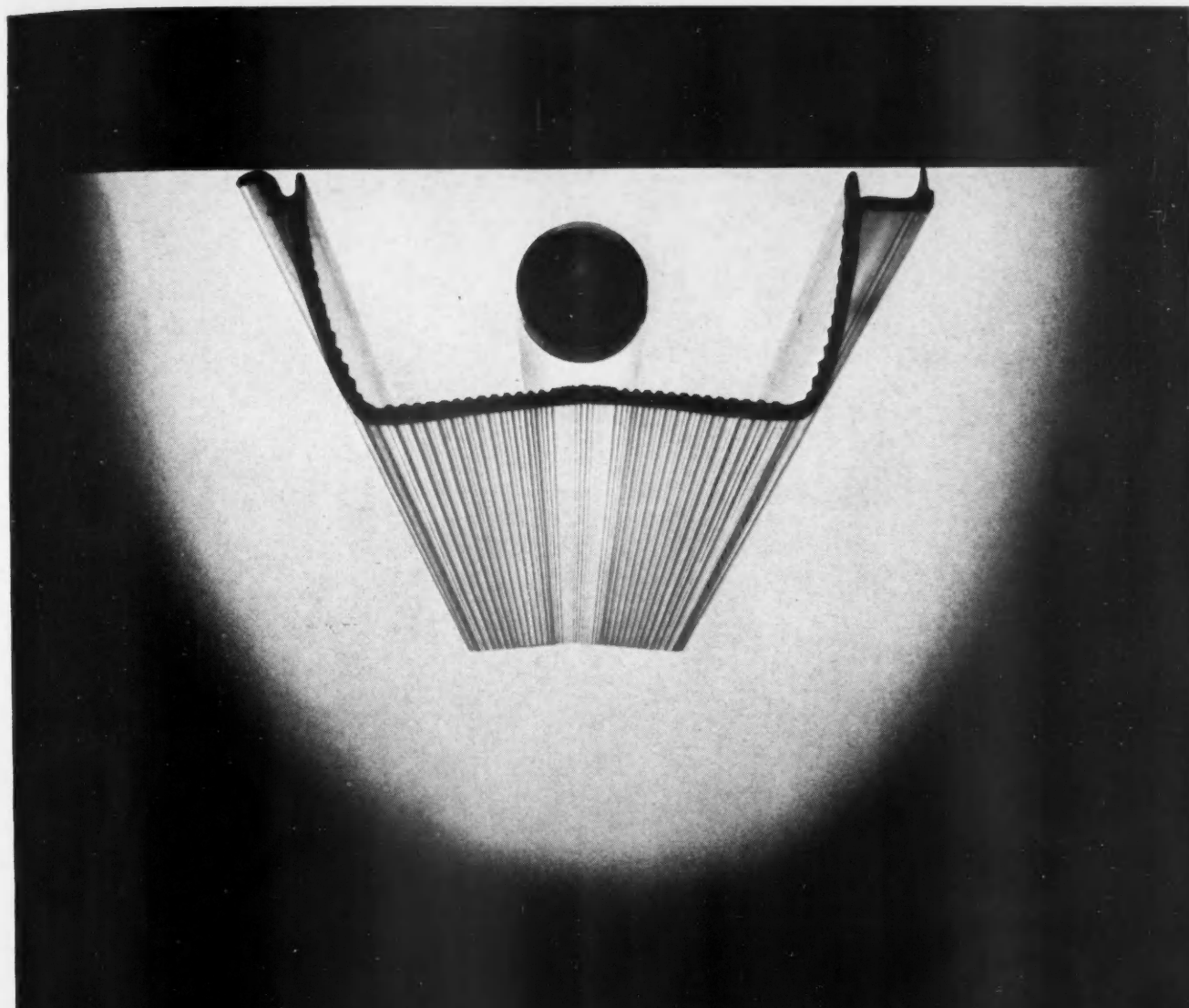
w full-
ot. B93,
escribes
pes and

flectors,
lamps,
Reflec-
on Ave.,

ex per-
t light-
prehen-
al Co.,

re than
sheets,
ets and
ashing-

R, 1961



75% MORE LIGHT WITH 35% LESS POWER

General Motors coach engineers have developed a new fluorescent lighting system with a transistorized power supply for their new buses. Instead of a series of small bulbs, one lighting strip extends the full length of the passenger area, under a cover made from EVENGLO polystyrene, a Koppers plastic. Extruded by Plastex Company of Columbus, Ohio, the EVENGLO cover has special ribs that bend and focus light rays along the ceiling. The EVENGLO lens reduces light going out windows, and concentrates it at the reading level. The new fluorescent system diffuses light in all directions, floods the interior with white, glareless light, and eliminates shadows and dark areas caused by former individual lights. This system gives 75% more illumination (12,000 lumens) yet it needs only 35% as much power.

EVENGLO can be molded or extruded to many shapes, sizes and colors in any degree of controlled diffusion, opacity or translucency. For more information on EVENGLO for fluorescent fixtures, write Koppers Company, Inc., Plastics Division, Dept. 128, Pittsburgh 19, Pennsylvania.



KOPPERS PLASTICS

Landscape lighting beautifies park

The grounds, overlooking Niagara Falls, will be night lighted all year

By George E. Toles, Field Editor, Hamburg, N. Y.

◆ The world's largest landscape illumination project has been completed by the Niagara Parks Commission at Niagara Falls, Ontario.

Special lighting units have been ingeniously installed in trees from Mowatt Gates at the entrance of Queen Victoria Park

to the refectory near the Horseshoe Falls of mighty Niagara.

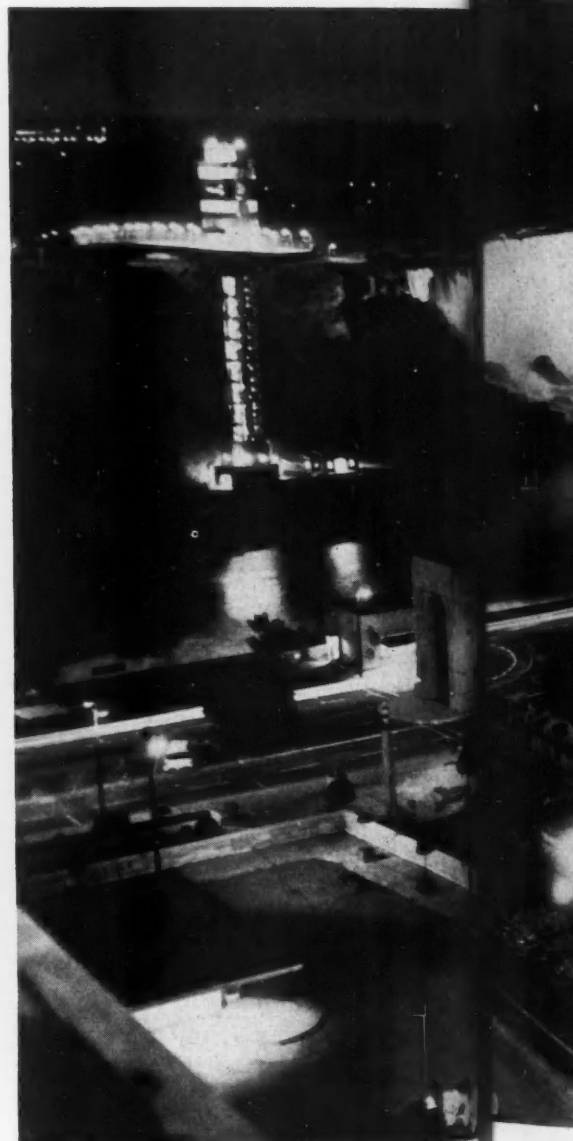
Costing \$125,000, the new system was designed by John Watson, a prominent landscape illuminator from Dallas, Texas. More than a year was required to design and lay out the special project. Gordon Wright Electric of Niagara Falls engineered and installed the lighting.

More than 20,000 feet of trenches were dug to accommodate some 70,000 feet of underground cable. There is an additional 16,000 feet of high-voltage primary lines.

The entire lighting system has a total load of 132,000 watts with five transformer stations which have a capacity of 25 to 35 kw each. *(Continued on page 76)*



Above: Hundreds of trees were pruned to accommodate the lighting installation. Right: The park has a dramatic view of Niagara Falls.



LIGHTING for NOVEMBER, 1961

rk

year

t of
mmo-
nder-
addi-
oltage

n has
s with
which
35 kw
ge 76)



Mercury lamps were used to enhance the green foliage.



Light intensity is two or three times that of moonlight.



R, 1961

LIGHTING for NOVEMBER, 1961



Board room lighting comes from a luminous ceiling panel composed of 12 of the modular luminaires.



In the press section lights were positioned for maximum effectiveness.

Prismatic

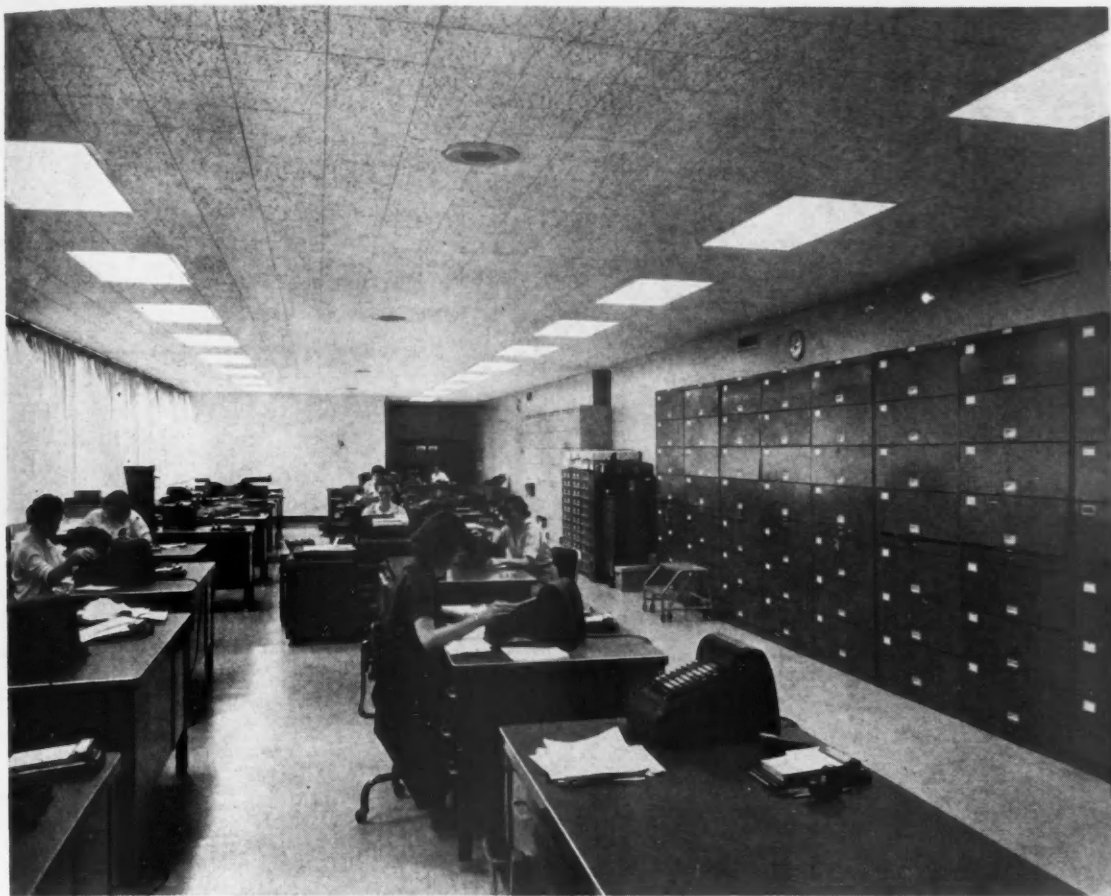
Standardization

◆ In planning International Salt's new headquarters office building in Clarks Summit, Pa., Von Storch and Burkavage, architects, cut lighting costs two ways: (1) they specified prismatic lenses of acrylic plastic for the fluorescent lighting fixtures, and (2) they standardized as much as possible on one type of fixture.

Although prismatic lenses are in themselves a premium item, they provide more efficient distribution of light, and thereby decrease the over-all number of fixtures required, in this case by about ten per cent. The net result is lower first cost and lower installation cost.

By standardizing on one fix-

LIGHTING for NOVEMBER, 1961



Within the rows, fixtures are on eight-foot centers; the two rows are placed on 12-foot centers.

lenses increase fixture efficiency

on one type luminaire also cut cost of office building installation

ture, installation was simplified and installation costs were further reduced. Future maintenance was also eased since parts for only one major luminaire need be stocked, and maintenance men need not learn the mechanics of a variety of fixtures. Some 350 identical recessed ceiling fixtures, installed to meet diverse office requirements, were specified for the 90,000 square foot building.

The recessed fixtures, supplied by the Miller Co., Meriden, Conn., are of a two- by four-foot modular size adapted for ready installation in ceilings of one- by one-foot or one- by two-foot tile, or two- by four-foot panels. They fit into two- by four-foot openings

and are secured to structural members above the ceiling. Cutting or shaping of ceiling tiles or panels generally is not required, and an integral flange covers the joint between fixture and ceiling.

The acrylic plastic lenses, supplied by Holophane Co., New York, N. Y., are a modular two by two feet in size. They have precisely shaped optical prisms molded in their surfaces to control light distribution. These prisms break up the light into a myriad of uniform overlapping cones, and direct it downward into the space to be lighted. The over-all illumination at any given location is the total of all the light from all the prisms servicing that

area. Light from prisms is confined within 120-degree angles, preventing it from shining into people's eyes, thereby avoiding glare. By thus controlling and directing the light, illumination levels are actually higher than provided by the bare tubes. Hence, the luminaire is made more efficient and fewer are required to light a given space.

One typical office has two parallel rows of luminaires spaced on 12-foot centers. Within the rows, luminaires are on eight-foot centers. The ceiling is of one- by two-foot acoustical tile. To install the luminaires, four tiles were simply omitted and the luminaires in-

(Continued on page 76)

Home relighting challenges industry

Both fluorescent and incandescent units can find wide application



A stone wall divider containing two fireplaces separates the formal living room from the den, which features a wall of walnut paneling. Six recessed units are contained in a soffit above the den fireplace. A movable fixture is hung from the den ceiling for flexible illumination.



The hallway to the bedrooms has a wall of draperies to diffuse the exterior light.



for designs and marketing methods

when a decorative, flexible, and adequate relighting is performed

By Irene S. Covington, Residential Lighting Designer, Mississippi Power and Light Co., Jackson, Miss.

◆ Today the lighting in existing American homes represents a challenge to residential lighting advisors, architects, and electrical engineers, as well as to the industry, to create, sell, and install equipment that will blend with and enhance the decor of these homes.

In fact, one of the most interesting jobs that one residential lighting designer in Jackson, Miss., has had was changing the entire lighting design in an existing home.

This house was built about 20 years ago, with few permanent fixtures and wiring that was inadequate and outdated. The exterior walls are of crab apple stone and the interior walls have three coats of plaster.

The wiring, the stone walls, and the three layers of plaster

created quite a problem to the electrician and to the builder, but the real problem was in convincing the family and the interior decorator that modern lighting techniques and equipment not only should be but could be installed to add beauty and greater living comfort in every foot of living space in this house—without impairing the lovely architectural design of the rooms.

With the consent of everyone concerned, a complete lighting plan for the interior and exterior of the house was designed. This plan included a complete electrical system and lighting equipment that would provide flexibility in rooms that are used by the family for modern living activities, such as entertaining, conversation, sewing, games, piano practicing, and reading.

In a conference with the family, the electrical contractor, the carpenter, the decorator, and the lighting designer, details for construction and installation of the wiring and lighting were analyzed and discussed.

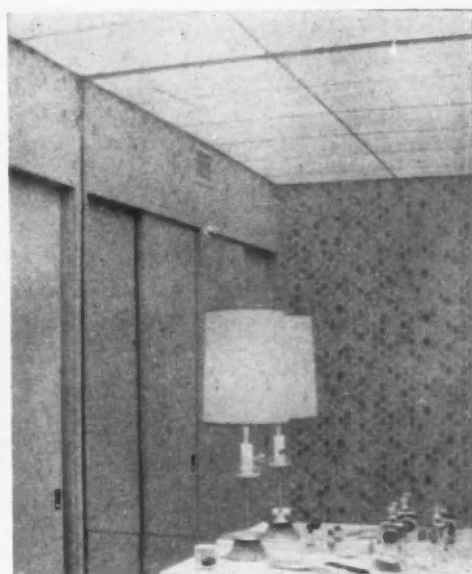
The lighting fixtures found in this home could not provide suitable amounts of light for the many seeing tasks of this modern family. Instead of adding charm, cheerfulness, and beauty, they added gloom and glare.

Antique lamps in the formal living room did not provide enough light to create the desired formal atmosphere. They were replaced with five open top lamps and eight feet of cove lighting. Each lamp was equipped with a three-way switch that carried one 50/150-watt R/40 bulb. A dimmer switch was used to control the light. These lamps added to the balance and decorative beauty of the room.

The cove lighting is very soft, and blended with the other lighting treatments, adds highlights and shadows in the room. Two 48-inch, 40-watt tubes were used.



Four square recessed fixtures in the kitchen each contain six 20-watt fluorescent tubes, light from which is diffused by plastic shielding.



A luminous ceiling was installed in the dressing room to replace a 60-watt unit.

The draperies, walls, and carpet are an off-white color, reflecting a flattering light into the room.

There is a stone wall divider between the living room and the den. The objective in the den was to provide decorative lighting on the fireplace wall and some general illumination in the adjacent areas. The stone wall is about 12 feet wide. The room ceiling height is ten feet.

A soffit 12 inches deep was installed to house the six recessed units used. Each unit carries one 75-watt R/30 floodlamp. To give flexibility and effect a dimmer switch was used.

On the solid wall (black walnut) in the den two portable lamps with open top shades were used, one at each end of a couch. This provided lighting (20-40 foot-candles) for two reading centers. In each lamp is one 50/250-watt bulb.

The small (two-socket) overhead fixture was removed from the ceiling and replaced by a traveler and attached to the travel track is a fixture with an adjustable reel. This fixture is used over a game table; when not in use it accents an oriental card table.

Dining room lighting

The chandelier used in the formal dining room was a gem but the room was drab in the evenings. The objective in this room was to provide unique decorative lighting in a subtle manner, and to add sparkle to the chandelier.

Four pinhole downlights, with one 75-watt R/30-watt in each fixture, were recessed in the ceiling at the base of the chandelier. These lights were wired on a dimmer switch. Not only the chandelier but the table accessories sparkle from the downlights provided by this installation.

The one small two-socket fixture in the 30-foot inside hall was inadequate. This fixture was moved to the garage and three three-socket fixtures, formerly used in the large bedrooms, were installed ten feet apart on the hall ceiling. The objective here was to conceal several small and unattractive windows and to provide an even, low-brightness

source of general lighting.

The entire window wall of the bedroom hall was covered with full pleated draperies made of finely woven off-white nylon (about 80 per cent reflectance). The sunlight is diffused through the sheer draperies. The entire house is air conditioned so the draperies are rarely drawn.

Bathrooms improved

Each of three bathrooms was relighted, adding a total of 11 fixtures with 880 watts of fluorescent lighting. The ceiling in the six- by eight-foot dressing room was lowered 12 inches, and a luminous ceiling was installed to replace the small 60-watt clear glass fixture used in this area.

Five rows of T-12 30-watt fluorescent tubes were installed. Two rows of the tubes were positioned on the ceiling directly over the mirror; the other rows were spaced 18 to 24 inches apart over the remaining area. Small eggcrate plastic shielding was used.

A pair of facial lamps was selected to provide the punch of lighting needed on each cheek at the dressing table. One 30/70/100-watt bulb was used in each lamp.

In each of the four bedrooms, small two-socket fixtures were replaced with one fixture having four sockets, with a 17- by 19-inch diameter in the shielding glass. A 60-watt bulb was used in each socket, thus doubling the general illumination wattage in each room.

In addition, eight open top portable lamps were added in the bedrooms. Each lamp carries one 50/150-watt R/40 bulb and provides suitable amounts of light for reading or study.

Fluorescents light kitchen

The kitchen was also relighted. Two small clear glass fixtures were replaced with four square units of recessed fluorescent lighting. The interiors of the recessed boxes are equipped with polished metal reflectors which increase the light output. Each fixture carries six 20-watt deluxe cool white tubes. The shielding is plastic.

(Continued on page 76)

Industrial

Lighting in offices

By Henry G. Williams, Lighting Engineer, Wisconsin Electric Power Co., Milwaukee, Wis.

◆ In trying to tell the story of what modern lighting can do in industry, one electric utility has developed a course in industrial lighting for its industrial customers.

The Wisconsin Electric Power Co., serving Milwaukee and southeastern Wisconsin, has offered the course three times in the past two years to people from plants in and around Milwaukee. It has been well received and the utility considers it a very effective means of building both electric load and good will.

The course was originally modeled after the Edison Electric Institute's "Fundamentals of Industrial Lighting" course. Changes have been made, however, that reflect the students' comments and the instructors' experience in presenting the course. Some subjects have been expanded, some cut down, and more time has been provided for demonstrations and student participation.

The changes have proven very satisfactory and the result is the present eight-week course (one two-hour session each week).

Topics covered include the science of seeing, definitions, light sources, light control, lighting calculations, light for seeing, office lighting, and industrial lighting.

The course is a practical one that not only shows how to choose fixtures and make layouts, but also provides enough background in basic principles of light and sight to give meaning to the practical applications.

In working out the best method of presentation for such a course, it was found that *showing* the students with demonstrations and slides is better than just *talking*

course emphasizes practical work

and production areas is thoroughly covered in 16 hours of instruction

to them, and that having them work out experiments and problems on their own is also very effective.

Because of this, demonstrations have been devised for every subject taught, seven different experiments must be performed by the students, and homework is required for seven of the eight sessions. In addition, there is plenty of opportunity for questions and discussions both in class and in the bull sessions held after each class.

All sorts of demonstrations are used. They range from simply holding up the various light sources used in industry to a skit that shows how proper maintenance can greatly increase light levels.

The experiments are performed individually with each student answering written questions on the results. These answers are then discussed in class. Four experiments in the first session are used to prove that better lighting improves vision; other experiments in later sessions show principles of light control.

Solving problems in class and in the homework has proven to be a necessity. Doing this work shows what each student has or has not learned and the discussions that follow straighten out any erroneous facts or approaches to the problems.

To find out what the students think of the course and what concrete effect it will have, they are requested to fill out a questionnaire at the last session. The results have always been very favorable.

None of the students who attended the latest presentation listed any dislikes. Instead, they all thought their expenditure of time and money (\$5 registration

(Continued on page 75)



W. C. Kuhnke, left, Wisconsin Electric Power lighting engineer, discusses features of an industrial reflector and mercury lamp.



Mr. Williams, third from left, holds an explosion-proof unit.

'Room of Tomorrow' gives emphasis

Designer uses a variety of fixtures to show some of the latest ideas

◆ The "Room of Tomorrow" displays, sponsored each year by the National Hotel Exposition, have gained acceptance as an important indicator of trends in design.

Designer Emily Malino, responsible for the rooms to be shown at the 1961 exposition—which opens in the New York Coliseum on November 5, has operated on the theory that a hotel or motel room is a home away from home.

She has developed designs that include ideas which can be used effectively by home lighting designers. Her lighting design indicates an imaginative flare for decorative values as well as functional performance.

Her talents are demonstrated by a one-room or studio suite (illustrated here), and a deluxe two-room suite.

Meticulous attention has been paid in placing the lights to establish the right "lighting mood" for the right area, particularly to provide comfortable visibility for all seeing tasks.

In the one-room suite, several interesting lighting innovations have been introduced. Positioned against the length of one entire wall, five poles have been recessed between panels that are set out from the wall, just enough to conceal the thickness of the poles, but nevertheless giving a dramatic modular effect.

Thus, each pole illuminates a given area, and is equipped with the proper lighting unit for that application: two of the poles are near the beds, permitting each occupant to read in comfort. Another is stationed near a desk, providing working light, while the others are placed near the vanity for make-up light.

On the ceiling in the L-shaped area in this one-room suite, six fixtures, with striking walnut and

birch frames, are mounted in an L-pattern, in themselves helpful invitations to move with ease through the space.

The entryway in the two-room suite sets the theme by the use of a recessed domed fixture which gives the effect of a skylight, thus inducing a sense of openness and spaciousness.

In the living-dining room there is an unusual handsome pendant fixture. The light source is totally concealed within the six long

tubes, but at the end of each tube is a sphere constructed out of heavy Venetian glass. In each sphere countless numbers of air bubbles are trapped in the glass, thus the light shines through the glass and sparkles like an illuminated fountain at night.

Another daring innovation introduced by designer Emily Malino was the grouping of multi-grooved recessed downlights to illuminate a change of level in
(Continued on page 75)



LIGHTING for NOVEMBER, 1961

sis

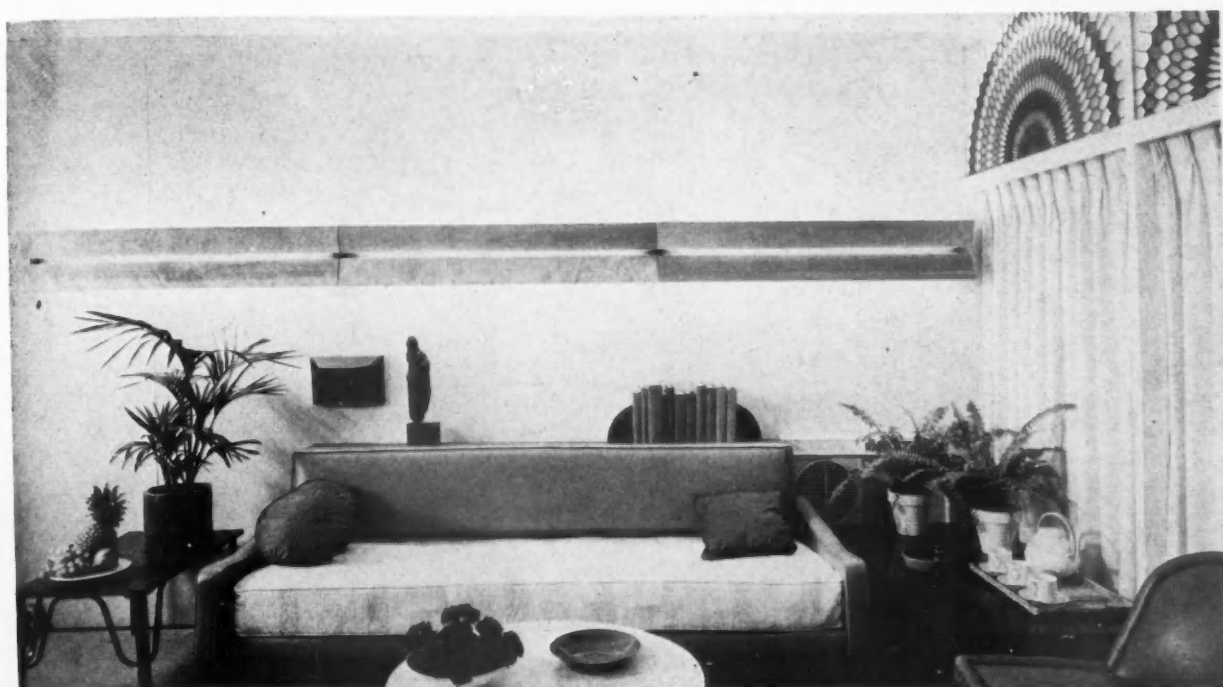
to important lighting design trends

ideas

in hotel-motel room lighting—ideas applicable to residential installations

h tube
out of
each
of air
e glass,
gh the
n illu-

n intro-
Malino
multi-
ghts to
evel in
5)

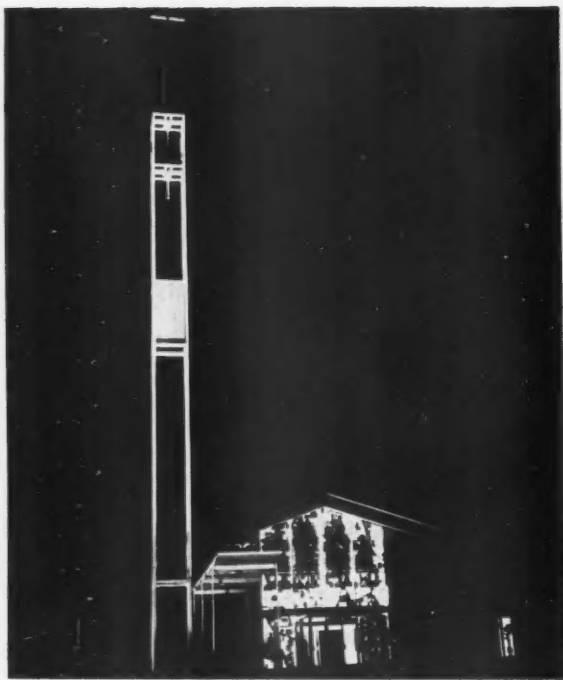


Above: Three units are mounted over the couch, giving the effect of custom-built installation without the high cost of custom-built lighting. Twin solid red birch baffles shield the two fluorescent tubes, wash the wall up and down with light.

Right: Moving in several planes, the panto-graph wall lamp provides good light with its molded styrene shade. In addition to abundant glareless light downward, it provides a halo of light upward to prevent the annoying contrast of dark and light that is often produced by reading lamps.

Left: Reflection of the walnut-framed ceiling fixtures seems to visually enlarge the room, encouraging movement throughout the area. Pleated glass chimneys are used on the lamps flanking the mirror, and bullets are used on the lamps flanking the walnut panel in the living room area. All four of these lamps may be moved up or down the poles on which they are mounted. A versatile, long-armed reading lamp provides light for anyone on the couch. Two recessed ceiling fixtures also provide good illumination for the living room area.





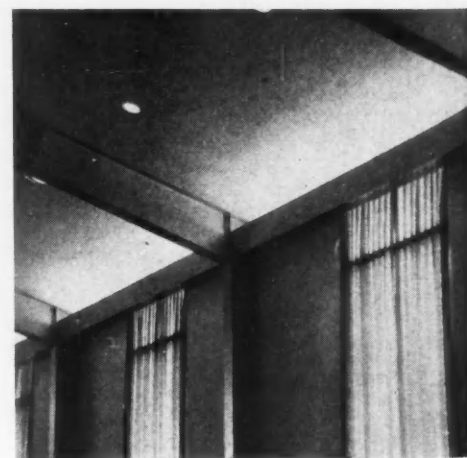
Lighting of the cross and the tower on which it is mounted must compete with nearby business lights.



Fluorescents in the mullions illuminate the dramatic window.



Spotlights concealed behind the forward ceiling beam highlight the pulpit, altar, and cross. Recessed downlights light the sanctuary, and fluorescent units wash the ceiling with light.



Lighting blends with church design

Outside lighting dramatizes a tower, inside lighting accents simplicity

By Kenneth W. Cobb, Consulting Engineer, Vosbeck and Ward, Alexandria, Va.

◆ The lighting of any building must be in keeping with its spirit, and lighting design is a creative outgrowth of the thinking and feeling which go into the architectural design of the structure.

Churches are certainly no exception to this. Indeed, the church structure, above all, has traditionally been one into which man has poured his greatest and highest thoughts. The architecture of a church must follow and express many feelings: the liturgy, the congregation, the reaching up to heaven, and the inspiration deriving from a worshipful atmosphere within.

In the same way, lighting must follow the architecture. Poor lighting can destroy the very best.

With this in mind, we consulted with the architect of Annandale Baptist Church, G. Truman Ward, to discover the feeling and philosophy that went into his concept of the building's design. Only through this approach could the lighting articulate the architecture.

In the sanctuary it was felt that prominent luminaires would detract from the clean line of the interior. For this reason we settled on recessed, low-brightness, Alzak downlights.

Putting these fixtures on ten-by-12-foot centers, we obtained about 15 footcandles of very comfortable light. Since this type of fixture has no lens and is fitted with a vertical lamp, it was possible to provide in the contract a relamping tool which could be used from the floor without the necessity of ladders.

Along the sides of the sanctuary between the exposed columns the structural engineer had required bracing consisting of eight-

inch channels. It was a simple matter to arrange with him to so position these channels that fluorescent tubes might be set in them, providing a wash of light upon the sloped ceiling.

At installation we found that vision angles from the balcony were such that the tubes could be seen. It was therefore arranged to include a simple 1/4-inch plywood strip on the face of the channels which extended their face an additional two inches upward. This was sufficient to hide the lamps completely.

To highlight the pulpit, altar, and cross, spotlights (PAR 38 lamps) were concealed behind the forward ceiling beam. Dimmers provided lighting of the intensity desired from time to time. In addition, the spacing of the downlights over the choir area was reduced in order to provide for better seeing in this location. These fixtures are also controlled by dimmers.

In the sanctuary itself no dimmers were used. Instead the fixtures were circuited so that they could be controlled in symmetric groups. One of these groups consists of a double line the length of the sanctuary and a second line crossing the sanctuary near the chancel area. Thus, a cross of light is provided.

For convenience in control a contactor is provided at the lighting panel which controls the service to the sanctuary lighting circuits.

Several strategically located pushbutton stations operate the contactor, and thus the lights may be turned off or on, as previously set, simultaneously.

Lighting of the stained glass front of the church presented a great problem since the rear of the balcony was located only about 30 inches from it and pre-

cluded the use of conventional floodlights. The problem was solved by the use of fluorescent strips located in the vertical mullions of the window, about five feet apart. These mullions consisted of eight-inch I-beams and, with the glass positioned at the front of the web, space was available to locate the strip vertically in the web of the mullion also.

Possibly the greatest problem of all was the lighting of the tower and cross structure which dominates the facade and is located some distance to the front of the structure between it and the main highway. The problem was one of competition.

A drive-in restaurant is located directly across the street to the east and a new and brightly lit service station to the south. In spite of the advantage of height, the tower was in danger of succumbing visually to these bright eye catchers.

The answer was not difficult: apply light in sufficient quantities to denote the tower and cross in the midst of the commercial lighting. This was accomplished by the application of 300-watt PAR 46 and 500-watt PAR 56 lamps located on three sides of the tower and placed to flood it with apparently even light.

"Apparently," since it is necessary to light the upper portions at a higher level than the lower in order to make the structure appear evenly lighted.

Again, the tower lighting problem was magnified due to its construction. A light airy appearance was achieved by designing the tower as four four-by-four-inch steel columns with a minimum of cross bracing. A high, narrow cross tops the structure, and an area of expanded metal about 60 inches high located two-thirds of

(Continued on page 75)

Fluorescent lamp dimming systems

Dimming ratios and other features are compared for several control systems

By Robert B. Kerchaert, Design Engineer, and Robert W. Zarosi, Sales Engineer, General Electric Ballast Dept., Danville, Ill.

◆ The introduction of the rapid-start fluorescent lamp in 1952 has been followed by continuing efforts toward the development of suitable control systems and rapid-start lamp ballasts for fluorescent dimming. As a result, a number of systems have been devised to permit the use of this relatively new technique.

Because there are so many practical applications for fluorescent-lamp dimming systems—from valance of cove-type lighting in the home to conference room or stage lighting to area illumination—a clear understanding of the various control systems available, their performance characteristics, and their limitations is essential.

Equally important is understanding the various lamp/ballast combinations—their relationship to the control, their performance characteristics, and their application requirements—in order to permit the satisfactory application of this versatile lighting method.

This discussion will provide a general understanding of both fluorescent dimming and the various control systems presently available. Since performance characteristics vary not only between systems but also among components within a given system, it is important to examine all pertinent information before deciding which system best fits given requirements.

Wide range system

The variable voltage, wide range dimming system, utilizing a special dimming ballast, has

practically unlimited application possibilities. The wide dimming ratios (300 to one) and the ability to start at any dimmer setting make this system particularly suitable where "tight" control over illumination level is needed. The control system is adaptable to either manual or automatic, motor-driven control. The term "dimming ratio" refers to lamp's ratio of maximum to minimum light output.

Dimming is accomplished through voltage control in a network comprising the lamp, ballast secondary, a low-level current limiter, and a starting circuit. Individual lamp light output over the dimming range is independent of control loading.

Variable primary voltage

While practically any lamp can be dimmed with the variable primary voltage system, it is most frequently used with 20-watt trigger-start ballasts for fill-in lighting. Dimming ratios of five to one are possible.

One limitation of this system is that a relatively high percentage of rated line voltage must be maintained. Stable operation of a fluorescent lamp depends, in part, on a relatively constant voltage relationship between ballast and lamp. Decreasing the voltage supplied to the ballast—in addition to decreasing lamp current and dimming the lamp—upsets this relationship. The circuit becomes unstable, causing the lamp to go out. The actual level of lamp brightness at which instability occurs depends on the characteristics of each ballast/lamp combination on the control; this level is characterized by lamps on the same control going out at different voltage levels.

With rapid-start lamps, starting

is, in part, dependent upon the attainment of a certain cathode temperature. As ballast primary voltage decreases, cathode heating voltage also decreases, making the lamp more difficult to start. For reliable starting, the control setting must be at or near maximum.

Variable secondary voltage

The variable secondary voltage system provides increased flexibility over the variable primary voltage method because of its increased dimming ratio (ten to one as compared with five to one). However, it has essentially the same limitation: inability to restart the lamps reliably at control settings much lower than full brightness. With the exception of this limitation, no detrimental effect on the life or operation of either ballast or lamp results from varying the secondary voltage of the ballast.

Variable reactance

Whereas light output in variable voltage systems is independent of control loading, in the variable reactance system the minimum light level of the individual lamp increases as the number of lamps controlled decreases from the rated number. If fewer lamps are connected to the control, the dimming ratio will be decreased as much as 50 per cent. There are no other adverse effects when the control is operated at less than rated load.

Total current in the control circuit is equally divided between the ballast/lamp combination at the control. The G-E 89G718 and 89G541 ballasts are designed to provide continuous lamp-cathode heating voltage, the required starting voltage, and the proper

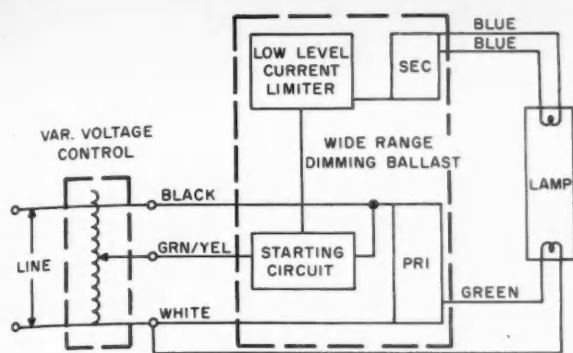


Fig. 1—The variable voltage, wide range dimming system consists of a variable voltage transformer, a special dimming ballast—G-E catalog No. 89G929—and the F40T12 rapid-start fluorescent lamp. This system can provide wide dimming ratios (up to 300 to one), and reliable lamp starting at any dimmer setting.

Fig. 2—The variable primary voltage dimming system is composed of a variable voltage transformer, a standard ballast, and fluorescent lamp. With this system, dimming ratios up to five to one are possible. However, this type of dimming system will not start the lamp reliably at any dimmer setting below the recommended input voltage (110 volts on 110- to 125-volt ratings), even though once started the lamp may not go out until relatively low voltages are reached.

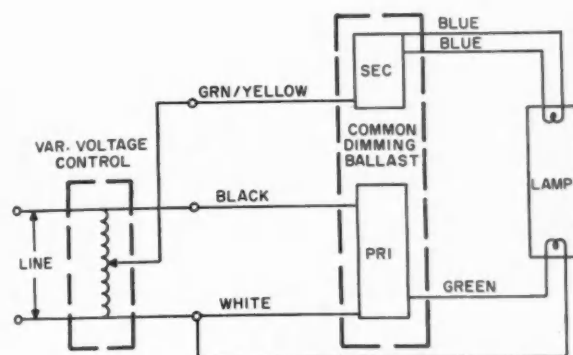


Fig. 4—The variable reactance system uses a variable reactor (modified variable voltage autotransformer) and a common dimming ballast—G-E catalog No. 89G718 or 89G541. The variable-reactance technique can provide a dimming ratio of approximately 40 to one. Reliable lamp starting can be obtained at any dimmer setting.

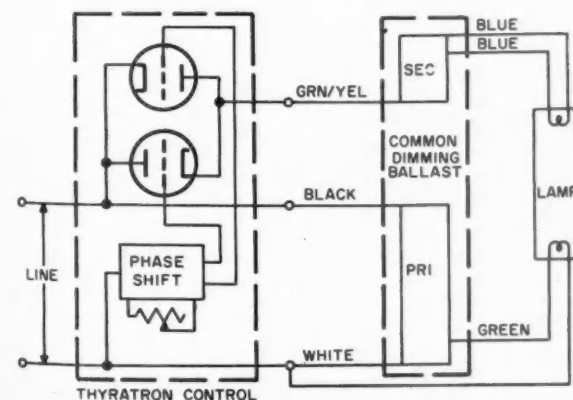


Fig. 3—The variable secondary voltage dimming system employs common dimming ballasts. Input voltage to the ballast is generally varied by means of a common variable voltage autotransformer. Tests have indicated that dimming ratios of approximately ten to one can be achieved with this system. The system cannot, however, start the lamps reliably at any dimmer setting below 110 volts. Caution should be exercised to assure that the dimmer control output does not exceed recommended ballast input voltage to avoid high currents and ballast damage.

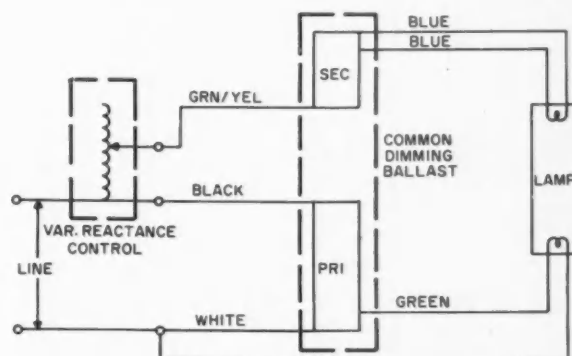


Fig. 5—The electronic wide range dimming system consists of four basic components: a pair of thyatron tubes, a brightness selector, and a common dimming ballast—G-E catalog No. 89G718. Dimming ratios as high as 500 to one can be obtained.

Editor's note: To add to the authenticity and practicality of this article, we are citing by catalog number the specific ballasts recommended for each application by the authors. Other ballast manufacturers publish tables which will show their corresponding catalog numbers.

impedance to limit lamp current throughout the dimming range. Impedance in the control reactor can be varied from zero to full by rotating the control brush. One side of the reactor is connected to the black side of the line, and the brush is connected to the ballast secondary lead. This circuit arrangement places the variable impedance in series with the ballast secondary winding and the lamp.

Maximum lamp current and light output are obtained when there is no additional impedance in the lamp circuit. As impedance increases, lamp current decreases and the lamp dims. The control reactor is saturated over roughly 75 per cent of the dimming range, providing relatively smooth light-level transition over this portion of the range. As the control reactor drops out of saturation, a change in impedance causes light output to change or step, and then to tail out at a much lower rate of decline. This system can provide a dimming ratio of approximately 40 to one.

Electronic system

The electronic system for fluorescent dimming makes it possible to vary ballast/lamp circuit current by controlling the period of current conduction during each half-cycle of the normal 60-cycle voltage. The two thyatron tubes are connected back-to-back to conduct current for both positive and negative half-cycles. Tube output through the ballast/lamp circuit is varied by controlling tube grid-voltage phase with a variable rheostat.

Since dimming ratios as high as 500 to one are available with the system, it might appear that thyatron-controlled dimming systems would be in greater demand than any of the other systems; however, this is not the case. The cost of providing frequent thyatron-tube replacement and adequate ventilation of control components tends to detract from the popularity of this system.

In addition to information contained in the preceding system descriptions, there are broad considerations of fluorescent-lamp

dimming that apply to most of the systems.

A fluorescent lamp is dimmed by decreasing the average value of the lamp-arc current, thereby reducing the phosphor-coating activation level. The result is a lower lumen output. When most ballast/lamp combinations are dimmed to extremely low current levels, a condition exists where a stream of luminescent slugs appears to be passing the length of the lamp. These slugs are actually small volumes of ionized gas, and are referred to as "striations" of the discharge. These striations are usually not detectable at low current levels unless the lamp is viewed directly. The striation phenomenon becomes less visible as brightness is decreased by shielding. To reduce the effect of lamp striations, light-diffusion means, such as those in luminous ceilings, should be used.

Unstable dimming-system operation is defined as that condition where lamps may flicker at low intensity, where they dim irregularly, or where some may go out before reaching the minimum dimming point. These effects become more noticeable when the system is dimmed and the lamps are operating at low current levels, due to the operating characteristics of both lamps and ballasts. When lamp current is decreased, the bulb wall cools below its optimum operating temperature and gas pressure within the lamp changes. This change in pressure may cause a change in the electrical characteristics of the lamp. As a result, both lamp light-output characteristics and ballast operating characteristics change. Generally, the combined changes are in the direction of unstable operation.

Other dimming considerations

Flicker is not normally visible when lamps are operating at maximum brightness. However, as the lamps are dimmed, the level of phosphor activation is lowered, and its dwell time shortened in relation to an arc discontinuity.

Ballasts for fluorescent lamps, including dimming ballasts, are

designed to start the lamps in ambient temperatures between 50 F and 80 F. In this ambient temperature range, the lamp bulb wall will reach proper operating temperatures. The operation of lamps subjected to lower temperatures or cold drafts is likely to become unstable, however—especially in the lower portions of the dimming range. Therefore, direct exposure of lamps to drafts from air-conditioning equipment, fans, or heating ducts should be avoided. A sudden ambient temperature change which causes a change in bulb-wall temperature can also cause instability during the time required by the lamp to adjust to the change. Excessive bulb-wall temperatures may also adversely affect the dimming ratio.

To assure that the proper starting potential exists, a metal starting aid must be electrically connected to the ballast case and placed within one inch of the lamp along its entire length. Fixture reflectors normally fulfill this requirement. Lack of adequate starting aid is usually indicated when lamps go out above the minimum dimmer control setting. For reliable starting, the ballast case, lighting fixture, and the white lead should be electrically connected to ground on the 120-volt supply system.

Since new lamps may collect contaminants at the cathodes, unseasoned lamps may cause unstable operation. Seasoning for at least one hundred hours at full brightness is recommended in order to eliminate arc discontinuities caused by contaminant deposits.

Certain dimming systems are designed to operate either F30T12 or F40T12 rapid-start fluorescent lamps. But these two lamps cannot be dimmed simultaneously from the same control because of their differences in lamp voltage and light output. Therefore, lamps of only one type should be connected on any one control. Also, lamps having different phosphors for different colors will vary slightly in low-current operating characteristics. For best dimming results, use only lamps of the same color in any one system.

(Continued on page 75)

ps in
ween
bient
bulb
rating
on of
mper-
ly to
espe-
of the
direct
from
fans,
avoid-
opera-
es a
ature
luring
mp to
essive
y also
ng ra-

start-
start-
y con-
e and
of the
a. Fix-
fulfill
f ade-
lly in-
above
ontrol
g, the
e, and
electri-
on the

collect
es, un-
se un-
for at
at full
in or-
ntinui-
nt de-

ns are
F30T12
rescent
os can-
eously
ause of
voltage
efore,
uld be
ontrol.
fferent
ors will
ent op-
or best
lamps
ne sys-
5)

R, 1961



**For those in search of the unusual,
George Nelson's trend-starting
concepts begin with clocks,
bubble lamps, net lights,
ribbon wall, planters...and
know no limit. For complete
free information, write**

**HOWARD MILLER CLOCK CO.
ZEELAND, MICHIGAN**

**National Distributor, Richards Morgenthau
225 Fifth Ave., New York, Merchandise Mart, Chicago, U.S.A.
Fehlbaum, Berne, Switzerland; Pelotas, Sao Paulo, Brazil;
Excello, Mexico City, Mexico; Weston, Bogota, Colombia**

Successful firm outsells cutrate

Promotions aimed at middle and upper incomes let company stress

By Edward R. Lucas, Field Editor, Poulsbo, Wash.

◆ A business philosophy can hardly be summed up in a sentence. In some cases, however, one key phrase can open the door to understanding the philosophy of an outstandingly successful business.

At Seattle Lighting Fixture Co., a key phrase of this character would be the statement that "an item well displayed is more than half sold."

That thought, articulated by general manager Thomas O. Wimmer, gives good insight into the business thinking of Mr. Wimmer and his associates.

It tells, for example, just why this Seattle, Wash., company has developed display rooms of lighting fixtures which they believe to be unequalled by any other company in the Western states; why they keep regularly in stock in those showrooms over 1,400 fixtures of all major classifications; why they find it advantageous to maintain a perpetual inventory system; and why they have been able to outsell cutrate competitors without trying to meet low price competition.

Extended into commercial, industrial, and institutional installations, the concept also goes far toward explaining the company's success in building good sales volume in this area.

Seattle Lighting Fixture Company was established about 45 years ago. Twenty-five years ago the company moved into its present quarters on Second Ave. This building gives them altogether some 50,000 square feet of floor space for showrooms, shop, offices, and warehouse.

Today, Seattle Lighting operates successfully with 32 employees, primarily as a distributor of lighting fixtures.

As a sideline enterprise, the company manufactures lighting fixtures as well, under the name of Nemco Electric. The shop for this enterprise is located in the basement of the building. Over 20 people are employed here.

Seven showrooms

The lighting display showrooms have developed over a number of years. The company is continually improving its displays and now has seven showrooms of fixtures.

"We set these showrooms up primarily for our principal customers—the lighting contractors, engineers, and architects of this area," according to merchandise manager Donald Cline. "These business and professional people need to know what fixtures are available to them for homes of their customers and clients. There is no better way to acquaint them with this stock than to set it up mounted to the walls or ceilings.

"Often, too, these customers of ours will send their own customers down to our showrooms to select the fixtures they want for their homes. In such cases, we bill the contractor who sent them to us, at the usual wholesale price. He in turn bills his customer."

Good display is just as essential for a wholesaler as for a retailer, Mr. Cline believes, although it is sometimes unpredictable in its results. Recently, he put into one of their display windows two table lamps that had been on display for over a year without selling. The very next day, a regular contractor customer of theirs bought one. In its new surroundings, the lamp developed sales appeal it formerly lacked.

For this reason, too, the com-

pany now carries a limited assortment of home decoration accessories not related to lighting. For instance, they carry a variety of framed pictorial fabrics which are displayed on a wall in the table and floor lamp showroom. They sell at a moderate price of \$20 to \$30, and provide some minor additional sales volume. Their most important function, however, is to provide a setting for the lighting merchandise in that room.

Specific categories

Several of the showrooms are devoted to displaying fixtures of specific categories. One room, for example, shows only fixtures for bathrooms and kitchens. Walls and ceilings here are finished accordingly. An adjoining room, with black painted perforated board walls, displays only contemporary wall and ceiling fixtures.

One of the most impressive rooms of all is that devoted to the display of crystal fixtures. This was installed about five years ago and it has boosted sales of crystal fixtures to several times the former volume. Formerly, the company displayed only four or five of these fixtures.

"Ten to 15 years ago, crystal lighting fixtures were so expensive that potential sales volume was very limited. Today, we can sell this type of merchandise for about half the price prevailing previously," according to Mr. Wimmer.

"It's still a big ticket item, though, which means that one good sale gives a real boost to that day's volume. Prices of merchandise in this room start at \$90 and go to \$300 and more. We've found that there is a real demand for this kind of merchan-

competitors

quality and variety

dise among the higher income people of the community and that they will respond to a serious effort to merchandise it."

Merchandising policy

In the stock selected for all its showrooms, Seattle Lighting Fixture Company aims its merchandising efforts specifically at the middle to upper income groups. This requires good quality merchandise right down the line, with adequate variety in the best and most expensive fixtures as well as in the items of more general sales appeal.

This variety, the company has found, is the big drawing card that brings people into its showrooms. It accomplishes for them what price promotion does for others. The company specifically avoids price-cutting practices of that sort.

In its radio promotion, the company does not conceal its above-average price structure. In advertising crystalware recently, for instance, the commercial stated that prices began at \$90. This probably kept some people from coming to the showrooms, but on the other hand it attracted the higher income people interested in the unusual and the best.

Inventory control

With any company maintaining a variety of this sort, control of inventory becomes critical. Items with good sales potential must be kept continually in stock; and items that move slowly must be ordered in limited quantity or eliminated.

For these reasons, the company maintains a perpetual inventory system. This is done by card file, with exact quantities of every item listed on appropriate card.

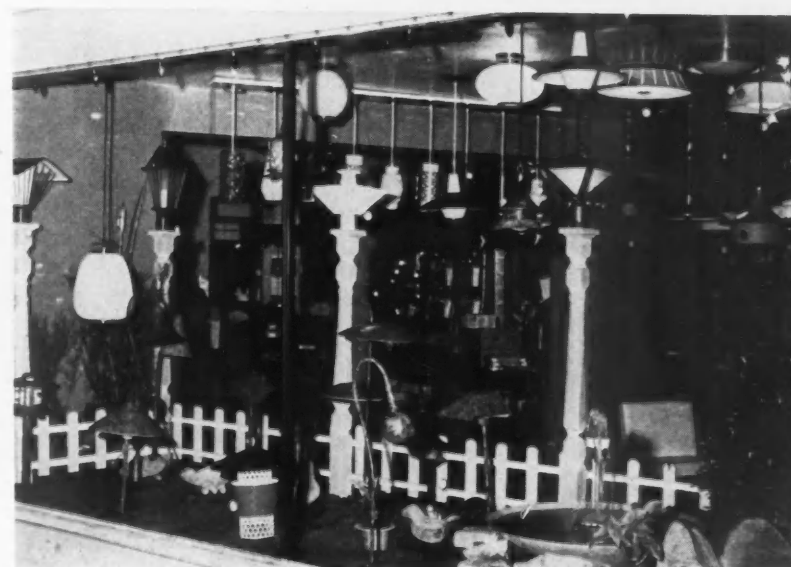


From the main entrance the customer is confronted with views of extensive fixture displays throughout the store.



Tom Wimmer, Jr., son of the store manager, reads while surrounded by some ornate and attractive ceiling units.

Passers-by see outdoor fixtures displayed in the window and interior fixtures beyond.





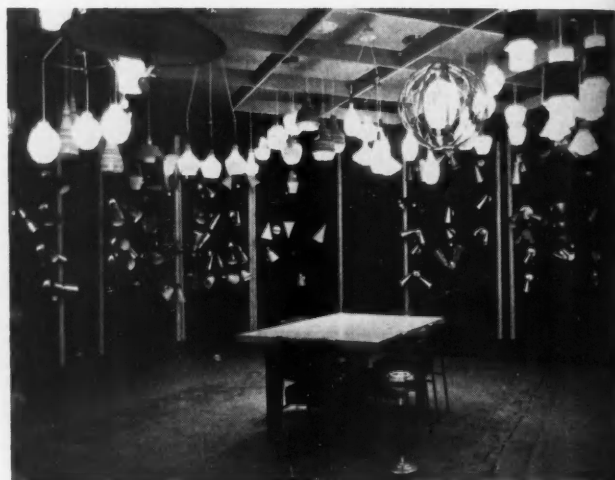
Some of these crystal fixtures retail for over \$300.



One area contains just kitchen and bathroom fixtures.



The office area ceiling features commercial fixtures.



Black walls accent contemporary wall and ceiling units.

The job of maintaining the system is assigned to one employee. A copy of every order every day must go to her desk. She transfers this information to the file cards every day. She also is responsible for reordering from suppliers items that have been sold down below an adequate inventory for their turnover rate. Orders are made up in quantities to supply needs for an estimated three months. Complete inventory is taken once a year.

"Besides keeping our stocks in consistently good order, our card file inventory system enables us to pick up a number of extra orders that we would not otherwise get," according to Mr. Cline. "Someone may, for example, call us by telephone to inquire about a specific type of fixture. They may not be a regular customer of ours but may have tried first

to get it from some other dealer.

"Using our card file, we can tell him within a minute just what we have. We don't have to search the warehouse for it. It's fast and efficient, and impresses the customer favorably. We pick up a substantial amount of additional sales volume this way."

The company will sell to retail as well as wholesale customers, but at the full retail price. Frequently, though, such a sale will turn into a wholesale transaction when a contractor who installs it for the buyer spots the company name on the carton. He may then call up and ask for his commission on the sale, which the company as a matter of policy allows.

Retail sales are a small proportion (less than ten per cent) of Seattle Lighting's total home fixtures sales volume. They have

been boosted somewhat, however, by the program of radio promotion that the company inaugurated several years ago. This also benefits wholesale sales to some extent.

Best results in advertising in terms of the investment, Mr. Cline says, have followed radio. This is now the only medium used for regular promotions.

This is a year-round program now, with commercials six times a day on Wednesday of every week. The program is that of a local commentator with a large following among the economic groups the company wants to reach. He has three, five-minute programs throughout the day: early morning, afternoon, and early evening. On Wednesday, Seattle Lighting's commercial comes before and after these three programs. Each commercial

ABOVE ALL:

Styrene lighting louvers molded of
LUSTREX® PERMA TONE



55° Louvers of Lustrex perma tone by American Louver Company, Chicago, Illinois, in the IBM Datacenter, Chicago, Illinois.

Here's why Lustrex perma tone is the most popular ultraviolet light-stabilized styrene today.

You can create large areas of illumination with uniform light distribution, and good diffusion, that are strikingly handsome yet low in cost. Lustrex perma tone—exceeding IES-NEMA-SPI joint specifications for ultraviolet light-stabilized styrene—assures truly translucent whites, and a complete range of colors. It is light in weight for easy handling, installation and maintenance—and it is dimensionally stable.

New Impact Lustrex perma tone provides extra toughness and flexibility for snap-fitting to metal parts, high resistance to abnormal abuse, and lighter weight through thinner walls. Write for comprehensive technical report on both types of perma tone, including accelerated aging test results and other valuable data on styrene in lighting, to Monsanto Chemical Company, Plastics Division, Room 801, Springfield 2, Mass.

LUSTREX: Reg. U. S. Pat. Off.



MONSANTO INNOVATOR IN PLASTICS

covers about one minute of broadcast time.

The commercials get good results even during the traditionally slower months of January, February, and March. These months were formerly excluded from the advertising but results justify carrying the program through this period as well, Mr. Cline reports.

Effectiveness of the program is indicated by comments overheard in the showrooms every day. On one occasion, too, a one-time commercial yielded 73 requests for a book on home lighting. These were both call-in and write-in, with call-in requests in the majority.

Christmas promotion

During special periods such as Christmas, the company supplements the regular commercial with short spot announcements. During last Christmas season, for example, Seattle Lighting bought five spots a day over three, three-day periods. The days they selected were Monday, Tuesday, and Wednesday of consecutive weeks just before Christmas. They thereby avoided competition with food store advertising.

The company has found a particularly good response to its Christmas promotional efforts. In this they emphasized giving the "gift of light." Many listeners who were at a loss what to give realized that a good lighting fixture or lamp solved their problems neatly.

The company has also found a responsive market for outdoor lighting fixtures. Some time ago, they set up a special outdoor lighting display in one of their windows, intending it to be only a seasonal display. They got so much response that they have made this window into a permanent display of outdoor fixtures, complete with fountain.

Even during the winter, sales of this kind of merchandise enjoy good volume. Homeowners apparently realize as the days get shorter that better outdoor lighting is desirable. And these fixtures, too, make good gifts.

Among its seven showrooms, one of the largest is that for floor

and table lamps. A large proportion of sales here, too, are wholesaled. Yet, the company must buy this merchandise at the same price as do most dealers. In many cases, therefore, the margin is small.

The company carries lamps primarily as an accommodation and to round out their stocks satisfactorily, Mr. Cline explains. They want to be able to supply everything in lighting to their customers.

Customer contacts in the showrooms are handled by a staff of three store salesmen. William R. Funsinn is sales manager of this staff.

In sales to their commercial, industrial, and institutional customers, Seattle Lighting follows the same general principles of supplying a quality product at an adequate price. Although they cannot display something that has not yet been put together, they do the next best thing. They design it, and show the customer a detailed sketch. Two men work in the design department, the head designer being Henry L. Royce.

"Drawing a design of an installation for a customer will take from an hour to five or six hours in most cases," Mr. Royce explains. "We make no charge for this service, which we consider to be a sales expense.

"That's exactly what it is, as the sketch frequently makes the difference between selling or not selling a particular job. These jobs can be profitable, too. The very minimum is \$100 for an installation of this sort, and we have had a few jobs in the \$100,-000 bracket.

"This is the best way to overcome price competition in this field, we believe. A competitor may quote a price of \$300 for an installation, compared with our price of \$500. We'd have a hard time justifying the difference if we could not show him on a drawing what we'd be able to do for him. In such cases, the sketch will very often clinch the sale."

This design service is particularly appreciated by electrical contractors and by architects who do not have their own light-

(Continued on page 75)

Night lighting displays unique gymnasium

**Outside fluorescent lighting
makes roof appear to float**

By Kenneth R. and Katherine MacDonald, Field Editors, San Francisco, Calif.

◆ Development of night lighting which would dramatize and showcase a revolutionary new type gymnasium and fieldhouse at Central Washington College, Ellensburg, was a challenging assignment recently given to Seattle electrical engineer Howard E. Schroedel and Spokane's Power City Electric, Inc.

The outdoor night lighting problem was created by a radical new design by Seattle architect Ralph Burkhard, who planned the \$1,440,000 all-concrete structure, the first on the West Coast to be wholly supported by exterior galvanized bridge cables.

The dramatic lighting effect desired was achieved by placing a continuous single strip of fluorescent lighting around the entire periphery of the 150- by 390- by 35-foot building, just inside plastic wall panels so that the parking grounds and adjacent land is illuminated at night, and so that all of the major structural spaces are visible from outside.

With present lighting rates at Ellensburg, it costs the college about ten cents per night to provide the dramatic lighting, which affords maximum visibility and security as well as illumination for parking.

(Continued on page 74)

ht
ng
ys
le
m

ting
float

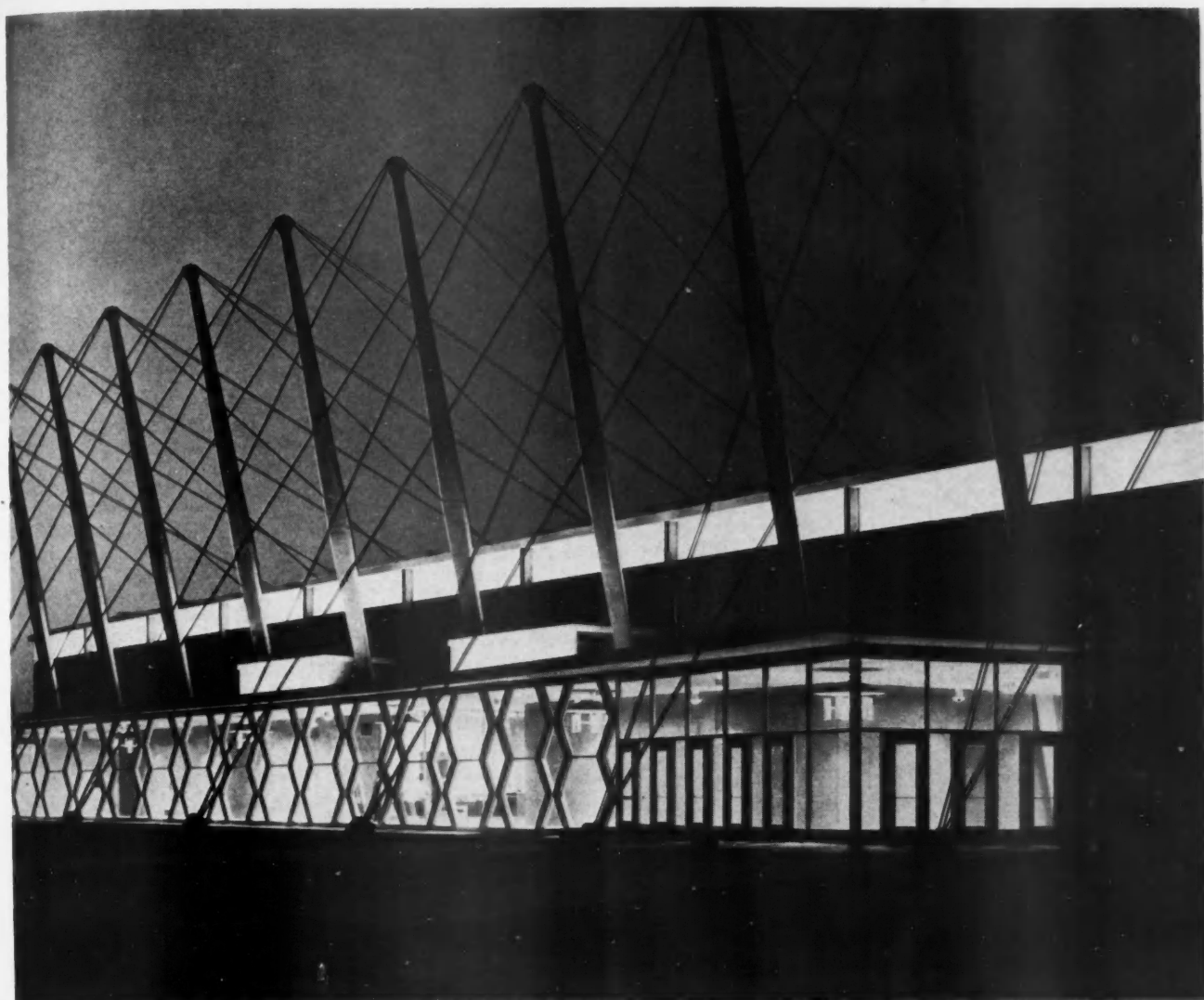
erine
San

light-
e and
new
house
college,
g as-
Seat-
ard E.
Power

ighting
adical
hitect
anned
struc-
Coast
y ex-
bles.
effect
lacing
fluo-
entire
0- by
plas-
park-
and is
o that
spaces

tes at
college
o pro-
which
y and
nation

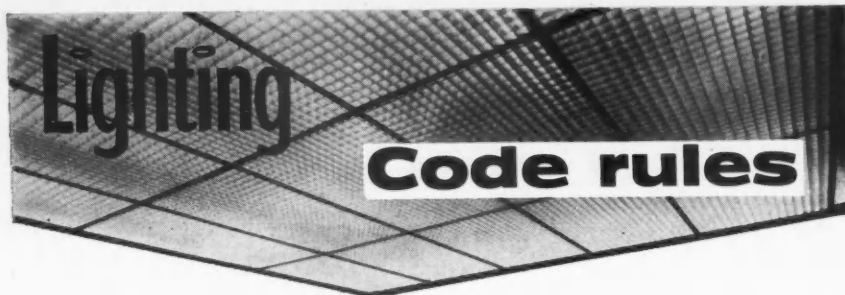
)
1961



A continuous single strip of fluorescent lighting installed around the exterior is protected by plastic panels.



Attractive incandescent units illuminate the entrance hall of the health and physical education building.



Special occupancy chapter covers locations made hazardous by cars

By Walter R. Stone, Contributing Editor on Code Rules, Utica, N. Y.

◆ It sometimes becomes difficult to determine the intent of the Code rules governing the type of lighting fixtures and associated wiring which are permitted in various areas where automobiles are repaired, painted, serviced, stored, parked, or offered for sale, especially since all these things can be done indoors and outdoors.

The special Code rules governing areas which are hazardous because of the gasoline fuel used by such automobiles are grouped in Chapter 5, the title of which is "Special Occupancies."

The term *occupancy*, which is used in this title, is thought by a great many people to apply only to a building or a part of a building. But this is not necessarily so. A vacant lot can be occupied and can be termed an occupancy.

The definition of the term, according to Merriam-Webster, is the possession or the act of taking possession of just about anything, including derelicts, wild beasts, and waifs. So the term itself is by no means limited in application to indoor locations.

Nor is any such restriction intended by the Code; for some of the locations referred to as among the hazardous occupancies of Chapter 5 are out of doors.

One example which comes to mind is a bulk storage plant, which includes "outdoor locations, areas adjacent to loading racks or platforms, or to above ground tanks. . . . Such areas shall be considered to extend 25 feet horizontally from such racks

or tanks, and upward from adjacent ground level to a height of 15 feet. . . ."

Another example included as constituting such an occupancy is a service station with areas including "In an outside location, any area . . . within 20 feet horizontally from any dispensing island or pump, or from any tank fill-pipe or tank vent-pipe . . . which shall extend upward to a level 18 inches above driveway or ground level."

Outdoor areas included

It should be evident by these and other similar provisions that hazardous locations, or occupancies, as defined by the Code, include certain areas out of doors as well as some indoor areas.

But getting down to specific cases, would an outdoor used-car lot, for instance, be classified as an area where special Code rules apply? Would such a lot be a hazardous location only if cars were repaired there? Or would it be similarly classified if cars were only stored, demonstrated, and sold from the area?

What about an indoor sales room where cars are displayed for sale but where no repairs are made? What about a parking area for a drive-in sandwich-and-drink stand? Or for a shopping center? How about a drive-in movie? When is festoon lighting permissible in car lots? And what are Code requirements for clearances of overhead wiring?

These are some of the questions confronting lighting engineers and electrical contractors faced with the problem of providing

lighting equipment and its associated wiring and control circuits in areas which are "occupied" by automobiles and similar vehicles which use gasoline for fuel.

A sifting of the rules reveals that some types of locations are covered more specifically and more completely by the Code than others.

Section 511-1, in regard to commercial garages, states, "These occupancies shall include locations used for service and repair operations in connection with self-propelled vehicles (including passenger automobiles, busses, trucks, tractors, etc.) in which volatile flammable liquids or flammable gases are used for fuel or power, and locations in which more than three such vehicles are or may be stored at one time."

It is clear from this and from the previously arrived at conclusion establishing outdoor areas as being among such locations that any indoor or outdoor lot or area where any self-propelled, petroleum-burning vehicle is repaired or where more than three of such vehicles are or may be stored is, by Code definition, a commercial garage.

All applicable rules applying to commercial garages, then, apply also to outdoor car lots which are used for repairs or for storage.

Parking areas

The question which immediately arises is whether a parking area is to be considered the same as a storage area. Is an area where more than three vehicles are or may be parked the same as, or different from, an area where more than three such vehicles are or may be stored?

Certainly where four cars are parked, four *may* be stored. And certainly from the standpoint of any hazards resulting therefrom, it would make no difference whether the vehicles were parked or stored.

Besides, the intent of the Code in this respect may be gleaned from the wording used to define a residential garage. Article 512 is entitled, to begin with, "Residential Storage Garages," and Section 512-1 defines such a garage (Continued on page 74)

TWO FACTORS

Contribute to the Superiority of
WILSON *Illuminated Ceilings*

★ **CIRCLGRID** ~~~~~
Non-burning, rigid vinyl louvers

★ **LUMATRAX** ~~~~~
Ultra-narrow ($\frac{1}{2}$ ") quick-mount suspension system

U.L.
APPROVED
For use under
sprinkler systems
Tunnel Test
Rating - 20



Ageless in beauty . . . versatile in performance, Wilson Illuminated Ceilings are rapidly becoming the architect's favorite lighting system for new construction or relighting.

★CIRCLGRID non-burning vinyl louvers feature thousands of tiny circles in transmitting soft diffused light, permitting intensities ranging to 200 foot candles. CIRCLGRID 2' x 2' and 2' x 4' panels consist of two non-combustible sheets of rigid vinyl electrically welded for great structural strength . . . with weight of only $3\frac{1}{2}$ ozs./sq. ft.

These popular CIRCLGRID louvers meet rigid fire code standards for metropolitan buildings . . . they possess acoustical properties, permit air conditioning and sprinkler

systems to function efficiently and the louvers are easily cleaned by rinsing in mild detergent.

★LUMATRAX exposed grid system offers the advantages of narrow support members and simplicity of installation. The tracks level quickly and perfectly by Wilson's exclusive spring clip. LUMATRAX is available in $\frac{1}{2}$ " E track (straight or contoured) . . . and $\frac{15}{16}$ " T track.

In other words, Wilson Illuminated Ceilings are recognized by leading architects and contractors as the outstanding system in the lighting field.

Write for Circlgrid and Lumatrax technical literature concerning the installation you are now working on.

J. A. WILSON LIGHTING

Peninsula Drive
ERIE, PENNSYLVANIA



J. A. WILSON LIGHTING LTD.

280 Lakeshore Road
TORONTO 14, CANADA

International Wilson Affiliates

ENGLAND, Harris & Sheldon Electrical Ltd. • AUSTRALIA, Greendale Engineering Company
SOUTH AFRICA, New-Era Lighting • MEXICO, Quinzanos

Lighting news

Dearborn civic center gets high illumination

ONE OF THE NATION'S newest civic centers, an ultra-modern "show-place" in Dearborn, Mich., has been only three-fifths completed—but the city's forward-looking leaders "planned ahead" with full parking and roadway facilities lighted by modern mercury vapor luminaires.

The multi-million-dollar center, built as close as possible to Dearborn's geographical center, is situated on a 50-acre site, donated by Ford Motor Co. Constructed so far are three buildings—a youth center, a police-court building, and a powerhouse. Still to be built are a civic auditorium and a new city hall. Master plan and individual projects were designed by Harley, Ellington, Cowin, and Stirton, Inc., architects and engineers.

Although money for the two remaining buildings has not yet been authorized by the town's voters, Dearborn's leaders planned for the entire project with a perimeter road and parking lots that will accommodate 1,383 automobiles. To light

the roadway and parking area, the city installed 96 General Electric 400-watt mercury vapor luminaires with color-corrected lamps.

The complete outdoor lighting installation is made up of 40 single-mounted and 56 twin-mounted luminaires. The 20,000-lumen units are on davit type poles spaced approximately 125 feet apart. The mounting height is 30 feet. Installation was done by the city's signal bureau.

Says city engineer Howard Lilley, "This is good, modern lighting. It provides maximum safety and the desired decorative appearance." When the perimeter road is completed, more General Electric luminaires will be installed, says Mr. Lilley.

National women's clubs promote streetlighting

STREETLIGHT GAZING has replaced star gazing for many members of the General Federation of Women's Clubs throughout the United States. Before Mrs. E. Lee Ozborn, dy-

namic president of this 16,000-club, 11-million member organization, introduced the idea of using adequate streetlighting to stamp out night crime and accidents, in September 1960, most clubwomen had never noticed streetlights.

"Now, we are forever looking up," says Mary Katharine Barnes, safety division chairman of the national organization. "While it used to be that we didn't know a lumen from an underground cable, we are gradually learning the lighting terms."

Throughout the country, members who discovered streetlighting was substandard formed committees and called on the local electric utilities, who filled them in on the age and condition of present installations and told them what was needed to make streets safe and pleasant. If there was no master plan for the entire area, members requested that one be drawn.

A meeting with the mayor and city council was the next step. It was a formal acknowledgement that streetlighting must receive the same consideration as other civic improvements.

Part of the crusade is an educational one. Friends and neighbors and fellow-citizens need to look up, too. They have to be told the reasons for and benefits of streetlighting. Clubwomen obtained staunch support as the result of meetings with merchants, downtown improvement organizations, and safety council and school leaders, as well as police officials.

The fact that the *Reader's Digest* documented the power of streetlighting in their June 1960 article "To Make Streets Safe After Dark" gave members a good talking point. In addition, it was a morale builder to have the magazine offer six awards of from \$50 to \$100 to winning clubs. More than 200 clubs worked on improving streetlighting during the first year.

First prize winner was the Newport Woman's Club of Newport, Minn. Other winners were the Springdale Woman's Club of West Columbia, S. C.; Lutz Land O Lakes Woman's Club, Land O Lakes, Fla.; Bozeman's Housekeepers' Club, Bozeman, Mont.; Westhaven Junior Woman's Club, Westhaven, Conn.; and Verona Woman's Club, Verona, Pa.

Going into the second year of the crusade, the clubs have the continued encouragement of the *Reader's Digest* which offers increased awards to winning clubs. Ten individual awards of \$100 each and 50 awards of \$50 are being presented.



Mercury luminaires from General Electric, drench the Dearborn, Mich., civic center parking area with light for visitors' safety and convenience.

THESE DIAMONDS GIVE YOUR FIXTURE BRIGHT NEW STYLING, HIGH EFFICIENCY TOO



Sheffield Tu-Tone extruded styrene diffusers offer new diamond prisms on bottom, plus ever-popular white translucent sidewalls.

You put the selling power of brand new styling in your fixture designs when you specify this latest Sheffield Tu-Tone diffuser. Its clear diamond prismatic bottom keeps fixtures right in step with the current trend.

The new diamonds offer high lighting efficiency as well. Excellent cutoff is obtained both lengthwise and crosswise of the fixture.

In addition, Tu-Tone retains its white translucent sidewalls, providing soft, even lighting to the side and a pleasing two-color effect.

Directo-Lite Prisms Also Available

Tu-Tone is also furnished with Directo-Lite longitudinal prisms, with or without crosshatching. And the flexibility of the Tu-Tone manufacturing process makes it suitable for a variety of fixture designs and shapes.

Tu-Tone, like all Sheffield diffusers, is custom-designed only. You can achieve attractive shapes which will be exclusive with your fixture.

If you would like further information on TU-TONE* or other popular Sheffield extrusions for lighting — Directo-Lite*, Frost-White-X*, and SL* prismatic lenses — write Sheffield Plastics, Inc., Dept. 15A, Sheffield, Mass.

First in Plastics for Lighting

SHEFFIELD PLASTICS, INC.

SHEFFIELD, MASS.

SALES OFFICES

New York, N.Y. LO 8-3760 • Drexel Hill, Philadelphia. MA 6-4762

Chicago: Bill Brown Sales Co., Inc. IR 8-8980 • San Francisco: Courtney Associates JU 5-5010

FOUR-LIGHTERS

TWO-LIGHTERS

CORRIDOR FIXTURES

MEDICINE CABINET FIXTURES

TU-TONE diffusers adapt to a wide selection of fixture designs.

Fixture Courtesy
Kent Lighting Corporation

*Trademark. Sheffield Plastics, Inc.



A large crowd visited the Prescolite traveling display room when it stopped by the C. S. Mersick Electric Supply Corp., West Haven, Conn. Architects, builders, electricians, and decorators turned out to see lighting trends and fixtures aboard the van. Sylvan R. Shemitz, right, president of Mersick Electric, points out some Swedish glass pendants to, from left to right, Arnold Jacobson of Jacobson Electric Co., interior decorator Bobbie Epstein, and William Llewellyn, sales representative for Prescolite.

Prescolite introduces traveling display room

AN UNUSUAL TRAVELING display room—specifically designed for the convenience of architects, engineers, and contractors—has been introduced by Prescolite Manufacturing Corporation of Berkeley, Calif.

The traveling display room, built at a cost of \$12,000, is constructed of a special aluminum body bedded on the chassis of an "Apache 40" Chevrolet truck. The aluminum body is eight feet wide, eight feet high, and 12 feet long. Inside, a representative number of Prescolite's latest lighting fixtures are displayed in luxurious surroundings.

"By bringing our line of lighting fixtures right to their office door, we feel we're making the architects' and engineers' jobs easier," explains Austin Little, Prescolite's sales manager. "Plus the convenience, we also want them to be comfortable as they look over our display and discuss their lighting problems with us."

With 200 square feet of space, the showroom on wheels can comfortably accommodate six visitors at one time. They can sit, or walk about and examine the more than 50 light-

ing fixtures—everything from the newest pendant and swivel fixtures to special recessed floodlights—displayed on the ceiling and walls.

The walls are teak paneled and a beige rug covers the floor. The lighting fixtures have on and off switches, with electricity provided by a special generator.

The traveling display room has its own driver-salesman, who follows a predetermined schedule and keeps the air-conditioned display room continuously on the move throughout the Eastern section of the country. Architects and engineers are notified in advance when the display room will be in their vicinity.

This is the first of three traveling display rooms that Prescolite is planning to build. The other two will cover the Midwestern and Western sections of the country.

Lighting display studio to open in Dallas area

Plans for a new, \$500,000, 51,800 square foot lighting studio have been announced by the Meletio Electrical Supply Co., Dallas, Texas.

The proposed 100- by 547-foot

brick and glass building will have parking spaces for more than 250 automobiles, and will be located in Preston Forest Square, Dallas.

To be displayed in the lighting studio are the products of more than 350 manufacturers which will include fine imported crystal items from Spain, Italy, Finland, Japan, Sweden, West Germany, and Czechoslovakia.

The new installation, which will be in addition to the present facilities and showrooms at 315 S. Central Expressway, will be open on a six-day basis, from 8 a.m. to 5 p.m. weekdays and from 8 a.m. to 12 noon on Saturday.

The lighting center is expected to draw buyers, contractors, interior decorators, builders of fine homes, and others from a five-state area and also many who have previously gone as far as New York to view and purchase similar items.

All Meletio deliveries and warehousing will continue to be handled at the Expressway address and at the company's warehouse at 3200 Main.

Sola Electric selects Jandl for new position

RICHARD L. JANDL has joined the Sola Electric Company as vice-president and general sales manager.

Mr. Jandl joins Sola after extensive experience with the Tung-Sol Electric Co., Inc. He most recently had been manager of the distributor division of that company. He also had served Tung-Sol as West Coast regional manager, headquartered in Los Angeles, and product marketing manager, based in Newark, N. J.

A graduate of the University of Wisconsin with the BS degree in economics, Mr. Jandl also attended The Citadel and, while in military service, Nebraska, Minnesota, and Cornell universities.



Richard L. Jandl

Kennedy to manage sales for Day-Brite

APPOINTMENT of George J. Kennedy to the post of general sales manager of Day-Brite Lighting, Inc., of St. Louis, Mo., was announced recently.

Mr. Kennedy was previously in New York as manager of the company's Eastern sales region and



George J. Kennedy

coordinator of national accounts. Before joining Day-Brite, he was general commercial sales manager of Graybar Electric Co., Inc.

He has studied marketing as well as engineering and received his BS degree in electrical engineering at Worcester Polytechnical Institute.

Rotuba Extruders names Midwest representative

ROTUBA EXTRUDERS, INC., Brooklyn 9, N. Y., has appointed Stanley Winton, 6434 N. Seeley Ave., Chicago 45, Ill., as manufacturer's representative to sell through the Mid-



Stanley Winton

west, covering the entire states of Illinois, Wisconsin, and Indiana. Mr. Winton graduated with a BS degree in illuminating engineering in 1941 from Northwestern University, followed by two years of graduate

Nation's LARGEST Manufacturer

of Christmas Decorative Lighting

(L. C. WILLIAMS of Houston, Texas)

USES **UNION** Pin-Type Sockets
--EXCLUSIVELY!



—BECAUSE they've proven over the years to **LOWER COSTS- SAVE INSTALLATION TIME-** and because they're Dependable too!



44408

PROFIT!
-through
EXPERIENCE

A COMPLETE LINE

CANDELABRA BASE
INTERMEDIATE BASE
MEDIUM BASE
and STREAMERS



43308

11108

- immediately available from factory and local stocks!

UNION
INSULATING CO.
PARKERSBURG, W. VA.

SOCKETS



study. Before joining Rotuba as a representative, he was connected with manufacturing organizations in the lighting field as general manager and in a sales managerial capacity.

Koppers opens center for expanded research

THE NEWEST AND LARGEST research center of Koppers Co., Inc., a diversified manufacturing firm whose products include plastics for fluorescent fixtures, has dedicated its newest and largest research center.

Located at Somervell Park, Monroeville, Pa., the facility represents an investment of approximately \$8,500,000, according to board chairman Fred C. Foy.

The 49-year old firm, with annual sales in excess of \$300 million, began to accelerate its research program about 15 years ago when it moved into chemicals and plastics. Until that time the company had been largely identified with engineering and construction—mostly in the steel industry, coal byproducts, wood preserving, fabricated metal products, and merchant coke plants.

Koppers' new facility, which will be the headquarters of the company's research department, is described by Mr. Foy as "one of the most advanced in the country." He cited the "planned expansibility" of the center as indicative of the company's long-term commitment to research.

Only about one-third of the buildings planned for the 176-acre site have been completed. No firm

schedule for construction of the remaining buildings has been set.

According to Dr. Paul W. Bachman, Koppers vice-president and director of research, the center will eventually be able to house over 1,500 scientists and their assistants—about four times its present number.

At the dedication ceremony, Mrs. Brehon Somervell, widow of the late Commanding General of the Army Service Forces, unveiled a bust of her husband who was chairman of the board and president of Koppers until his death in 1955.

G-E names Etherington as engineering manager

GENERAL ELECTRIC has appointed Theodore L. Etherington as manager of advance engineering for the outdoor lighting department.

The appointment was announced by P. R. Milroy, manager of engineering for the department.

Mr. Etherington succeeds R. K. Drake, who has been acting manager of advance engineering since February, when he was appointed to a newly created post of manager of area and specialty lighting engineering.

Since 1948, when he joined General Electric, Mr. Etherington has been associated with the research laboratory in Schenectady, N. Y. He served as research associate in various assignments, including boron hydrides, refrigerants and refrigeration processes, energy storage, and chemical reduction techniques as applied to metal films. He was

named liaison scientist for the laboratory's chemistry research department in 1960, a post he held until his present appointment.

Mr. Etherington was graduated in 1943 from Purdue University with a BS degree in chemical engineering.

Rosenblatt named head of Lehrolite company

LOUIS ROSENBLATT has been named president and chairman of the board of Lehrolite, Inc., Wallingford, Conn., succeeding Charles Lehrman, who is no longer connected with the company.

Mr. Rosenblatt, one of the founders of the company, has helped Lehrolite develop into one of the



Louis Rosenblatt

few complete line manufacturers of incandescent lighting fixtures in New England.

The fine working alliance of artists and artisans which Mr. Rosenblatt has created within the plant is reflected in a reputation for originality in design and fine craftsmanship which the company enjoys. He has been active in stimulating new developments, and has organized a highly capable management team.

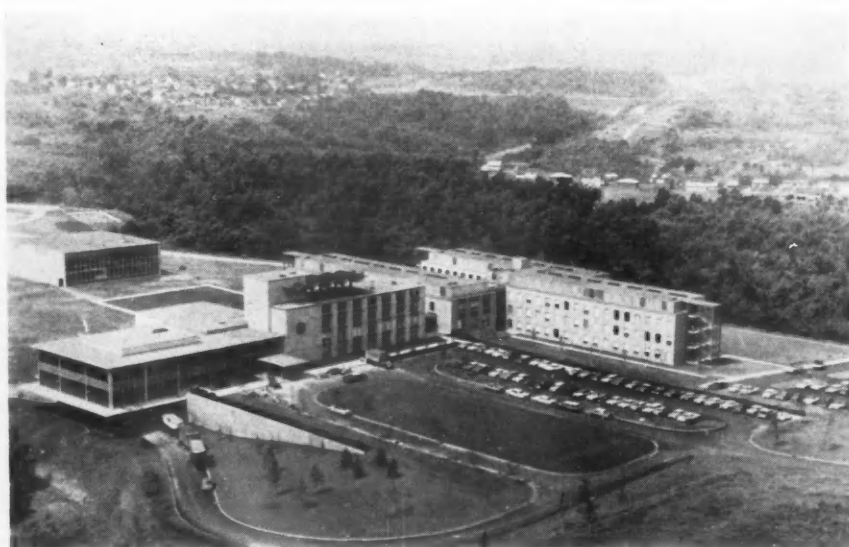
Duro-Lite, Inc., names Midwest sales agents

FOUR SALES representatives have been appointed by Duro-Lite Lamps, Inc., of North Bergen, N. J., to serve in the Midwest.

S. W. Terranova and Co., with headquarters in Chicago, is district representative for northern Illinois.

Clyde Warbel and Associates, with headquarters in Indianapolis, is district sales representative for Indiana.

Cam Norton and Associates will



The first stage of Koppers' large new research center will accommodate some 450 scientists and their assistants. The center was designed by the New York architectural firm of Voorhees, Walker, Smith and Haines.

serve northern Ohio, with headquarters in Cleveland.

M. J. Leahy Company will represent the company in southern Ohio, with Columbus, Ohio, as the center of operations.

Jefferson picks Hamel as manager of sales

SELECTION of William D. Hamel as manager of distributor sales for Jefferson Electric Co., Bellwood, Ill., was announced recently by Bertrand J. Farrell, general sales man-



William D. Hamel

ager of the major independent manufacturer of electrical ballasts and transformers.

Formerly sales manager of the New England district, Mr. Hamel has spent the past nine years with Jefferson. His experience in electrical sales and distribution dates back to 1945, when he was employed by the U. S. Rubber Company Wire and Cable Div.

Mr. Hamel received additional experience in distributor sales with H. Young, Jr., Inc., Cambridge, Mass. He is a 1941 graduate of Boston University.

Electro acquires control of Curtis-Allbright firm

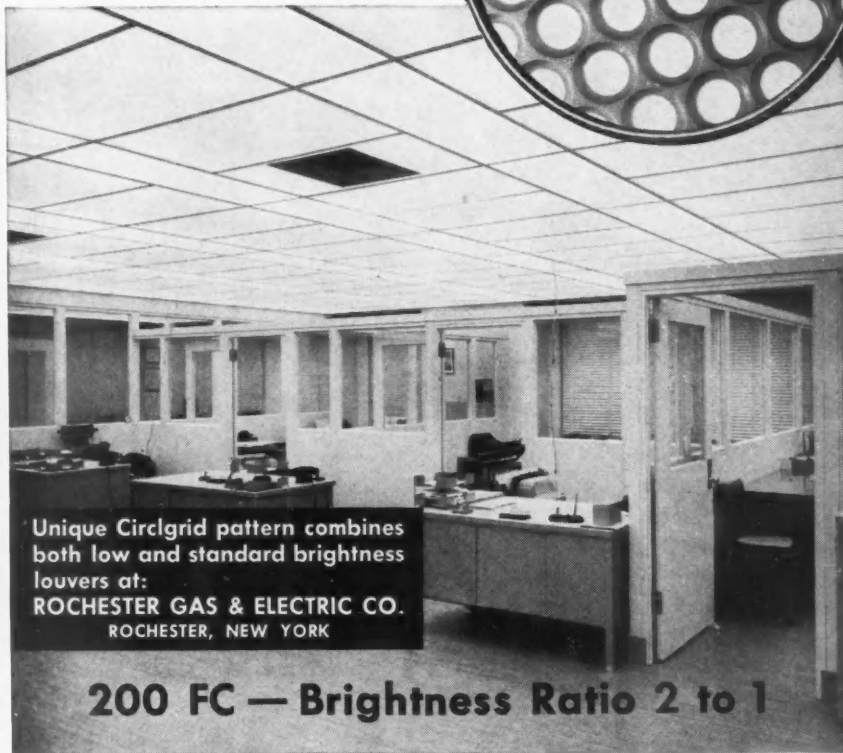
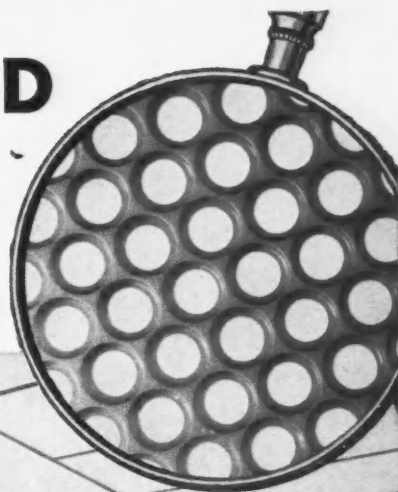
ACQUISITION of the assets and business of Curtis-Allbright Lighting, Inc., of Chicago, was made recently by Electro Consolidated Corporation through a subsidiary, Electro Luminaire Corp., Chicago.

Both companies are manufacturers of lighting equipment. Curtis-Allbright sales in 1960 were approximately \$4 million. Electro sales for 1960 were approximately \$7 million.

Leon Litner, president of Electro, in announcing the acquisition stated that operations will be continued both at the Curtis plant at 6135 W. 63rd St., and the Electro plant at

CIRCLGRID Light Diffuser

An effective design tool for the architect



Unique Circlgrid pattern combines both low and standard brightness louvers at:
ROCHESTER GAS & ELECTRIC CO.
ROCHESTER, NEW YORK

200 FC — Brightness Ratio 2 to 1

Licencees

ARCHITECTURAL CEILINGS
Long Island City, New York
BENJAMIN DIVISION
THOMAS INDUSTRIES
Des Plaines, Ill.
COLUMBIA LIGHTING
Spokane, Wash.
DIFFUSA-LITE CO.
Conshohocken, Pa.
LIGHTING PRODUCTS, INC.
Highland Park, Ill.
LITECRAFT MFG. CORP.
Passaic, N. J.
LUMINOUS CEILINGS, INC.
Chicago, Ill.
NEWMAN SCHRANZ LIGHTING CO.
Denver, Colo.
SYLVANIA LIGHTING PRODUCTS
Wheeling, W. Va.
THERMOTANK, INC.
Detroit, Mich.
TRIANGLE ELECTRIC MFG. CO.
Miami, Fla.
TROPICAL LIGHTING, INC.
Carolina, Puerto Rico
UNITED LIGHTING & CEILING CO.
Oakland, Calif.
JOHN C. VIRDEN CO.
Cleveland, Ohio
LIGHTING DYNAMICS, INC.
Dallas, Texas • City of Industry, Calif.
J. A. WILSON LIGHTING
Erie, Pa.

Circlgrid Light Diffusers offer flexibility in design—by size—by translucencies—by color—and with or without perforations. You'll find Circlgrids extremely rigid yet weighing only 3½ oz. per square foot. Circlgrids, with 500 openings per square foot, circulate cooling air, reduce dust settling 44%, appreciably trap sound in the plenum, and, most important, are approved for installation under sprinklers.

Whatever luminous ceiling pattern you plan, you can be sure that Circlgrid will give up to 25% more comfort light than other louvers.



Write for sample and illumination test data.

Box 655, Erie, Pa.



Division—The Wilson Research Corp.

1536 S. Paulina St., although it is expected that some consolidation of activities will be possible.

While there may be some consolidation of conflicting products, he said the major items of both lines will be retained. The acquisition also gives Electro the facilities to produce aluminum lighting fixtures with an Alzak finish.

J. Jaffe of Perfec-lite dies after long illness

JOSEPH L. JAFFE, prominent in the lighting fixture industry for over 40 years, died August 16 after an extended illness.

Mr. Jaffe entered the lighting field in 1918 when he acquired the Perfec-lite Co., of Seattle, manufacturers of lighting equipment, and transferred the operations to Cleveland in 1922. He was president of the company until 1956 and then became chairman of the board.

He held numerous patents in the electric lighting field and expanded Perfec-lite into a national organization. He was also founder and president of Perfection Glass Co., of West Virginia, from 1929 to 1940.

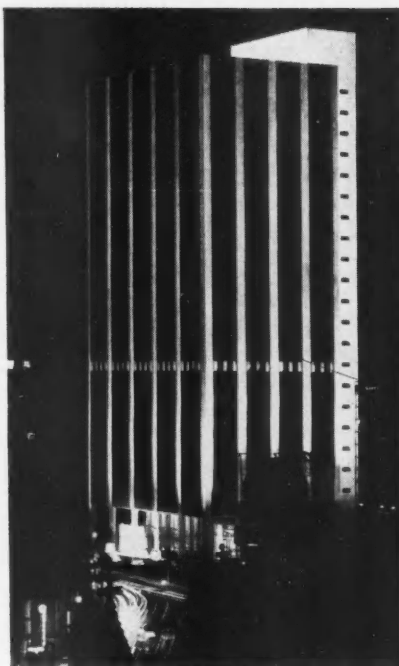
He was one of the founders and served as president for many years of the Lighting Equipment Manufacturers Association of Cleveland, and was an early member of the Electrical League of Cleveland.

Controlled beam lamps dramatize tall building

FIRST APPLICATION of a newly developed six-volt, 120-watt reflector lamp, having a highly concentrated filament and a very narrow beam spread, is the illumination of the



The new Sylvania reflector lamps operate at six volts and 120 watts.



At night the lamps illuminate the six-foot wide marble columns of the 22-story Georgia Power headquarters.

six-foot wide marble columns extending the full height of the new Georgia Power Company headquarters building, in Atlanta, Ga.

The new lamp, produced by the Lighting Products Division of Sylvania, has been designated the PAR 64X1. It is rated at 2,000 hours life and develops 250,000 beam candlepower. The lamp is equipped with a matte black light shield, which eliminates a direct glare from the filament.

In combination with the precise reflector control, the result is a narrow beam spread of only four by 6½ degrees, and is the least scattered light of any PAR lamp currently known to be available.

In the case of the Georgia Power installation, the lamps spread a tightly controlled ribbon of light along the six-foot wide marble columns on three sides of the new building. Each column is illuminated with nine PAR 64X1's aimed at the top and washing down to the 150-foot level of the 300-foot facade.

Three PAR 64X2's fill in the 30-foot to 150-foot level. These are somewhat similar lamps, but are rated 120 volts, 500 watts with a 2,000-hour life. By using a newly designed compact coiled-coil filament, a beam spread of eight by 20 degrees is achieved. The beam candlepower developed by this lamp is 240,000.

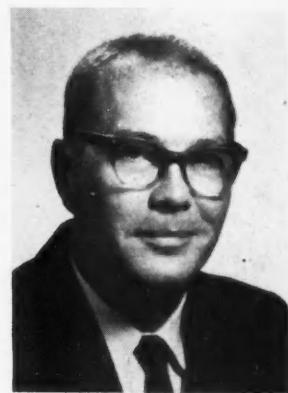
The Georgia Power Company installation was designed and engi-

neered by Abe Feder, of Lighting by Feder, in cooperation with Sylvania.

E. Bowen to represent Progress in Carolinas

THE NAMING of Ernest T. H. Bowen as sales representative in North and South Carolina for Progress Manufacturing Company has been announced by Will Turner, Progress vice-president in charge of marketing.

Mr. Bowen formerly practiced architecture in Tampa, Fla., where he was a principal in the firm of



Ernest T. H. Bowen

Pullara, Bowen, and Watson. He holds a degree from the University of Florida.

His territory includes all South Carolina with the exception of Aiken, and all of North Carolina excluding Elizabeth City and Leakesville. Mr. Bowen's headquarters will be in Charlotte, N. C.

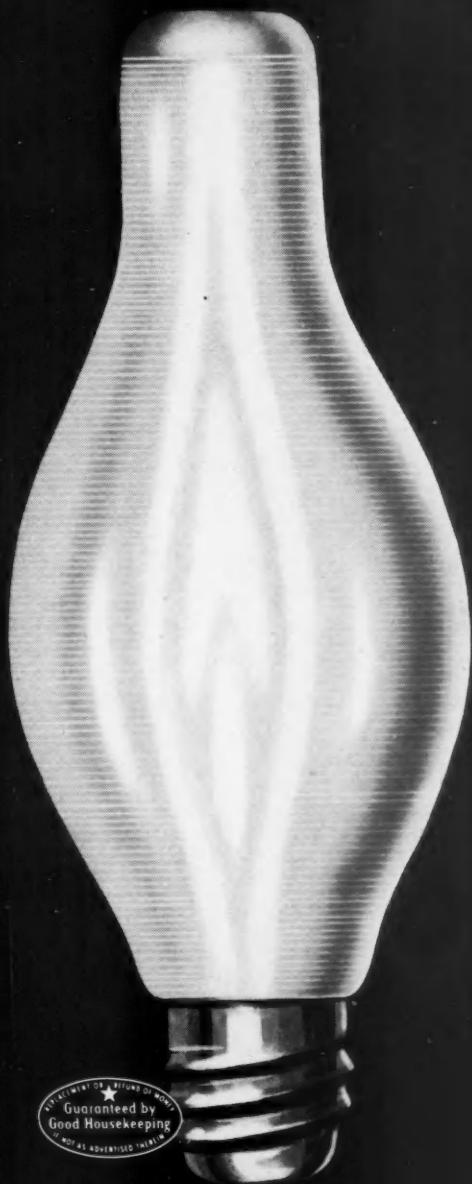
Kirlin appoints agency to cover Texas areas

THE WHITLOW-BRISCOE Co., Dallas, Texas, has been recently appointed to represent the Kirlin Company in northern and west Texas, it was announced recently by Paul D. Cornelisen, sales manager for the manufacturing company.

Enchante chandeliers grace beauty pageant

NEARLY 100 Enchante chandeliers were used to illuminate and decorate the front of the stage, ramp area, and the auditorium during this year's Miss Universe pageant in Miami Beach, Fla.

Two models of the crystal chandeliers, from Thomas Industries,



FLUORESCENT CHIMNEY-LITE™

ANOTHER GREAT ORIGINAL BY

duro-lite

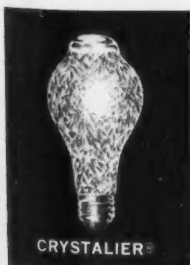
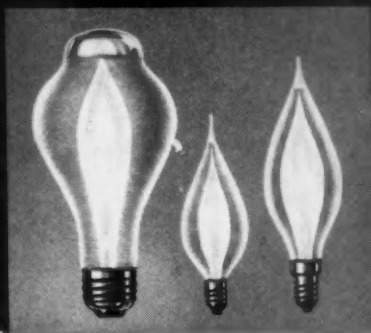
Fluorescent is now available in a superb new design—CHIMNEY-LITE! This modern version of the antique chimney lamp, with a lovely tapering "flame", is perfect for modern or traditional interiors. Weather-proof for outdoors!

Precision engineered, of course, to famous Duro-Lite long-life quality—lasts 3½ to 5 times longer—unconditionally guaranteed!

Chimney-Lite literally sells on sight! Backed by powerful consumer advertising...smartest packaging in the business...sales-proved Point-of-Purchase displays...on-the-ball merchandising aids for your salesmen!

Make your bulb business BIG business with America's most successful new decorator bulbs! Write for details today!

Duro-Lite Lamps, Inc., North Bergen, New Jersey



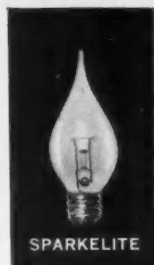
CRYSTALIER®



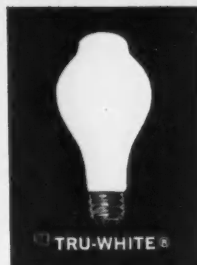
GLOBELITE®



3-WAY



SPARKELITE



TRU-WHITE®



CANDELITE®

AMERICA'S MOST COMPLETE LINE OF LONG LIFE BULBS



Miss Universe of 1961, Marlene Schmidt of West Germany, admires an Enchante unit lighting her way.

Inc., were used during the event. Model No. E-8640, hand-cut, hand-polished imported crystal, with five medium base flame lamps, detachable crystal drops, and a chrome canopy and chain, was featured in some parts of the staging, while model E-8641, which is identical but with six medium base flame lamps, was used in others.

Lighting lowers tension, traffic tests point out

PROPER LIGHTING of highway intersections can reduce driver tension by more than 20 per cent, according to an award-winning paper presented in Washington, D. C., recently.

A Texas Transportation Institute research engineer described for the 31st annual meeting of the Institute of Traffic Engineers how he applied medical techniques for the first time to measure driver reactions to lighted and unlighted highway conditions.

The tests were conducted under the joint sponsorship of the Texas Highway Department and the Bureau of Public Roads.

The paper, presented by Donald E. Cleveland, assistant research engineer at the institute, won the ITE Past Presidents' Award, the first paper devoted to highway illumination to capture this honor.

The tests, which electrically measured skin response in much the way a lie detector operates, were conducted as part of a program to pinpoint the effect of highway illumination on driver comfort and convenience.

To record reactions of the participating drivers, electrodes from a galvanometer were attached to each driver's left hand, and a weak electrical current fed through the instrument. Each driver then was instructed to direct his auto through a predetermined traffic pattern, which included the test intersection. Drivers were ignorant of the purpose of the test, or the exact section of the course during which their reactions were being recorded.

Results, Mr. Cleveland said, confirmed that with the intersections lighted, 22 per cent fewer tension responses were recorded, the magnitude of the responses was also 22 per cent smaller under lighted conditions.

Over the course of a typical test pattern, 170 responses were recorded with no lights and 133 with the luminaires turned on. Similarly, the total magnitude of 1,082 reaction units was reduced to 864 tension reaction units by turning on the lights, Mr. Cleveland reported.

The tests were conducted recently near Houston, and the presentation marked the first comprehensive disclosure of Mr. Cleveland's findings.

The research engineer prefaced his findings with this observation—"The traffic engineer must concern himself with night traffic operations since the night accident rate is approximately double the day experience. The constantly increasing traffic volumes emphasize the importance of this problem as more and more people and goods move after dark."

J. A. Wilson Lighting makes appointments

TWO SENIOR APPOINTMENTS of J. A. Wilson Lighting, Ltd., have been announced by Harry R. Yates, executive vice-president of the company.

Named director of research and product development is Donald C. McCormack, while Hedley F. Davidson has been appointed manager of engineering.

Mr. McCormack joined the company in 1950, and prior to his new appointment was manager of product development and engineering. A past president of the Association of Canadian Industrial Designers, he is also a founder member and director of the Association of Professional Industrial Designers of Ontario.

Mr. Davidson, who is a Fellow of the IES, is also a member of the research executive group of the Illuminating Engineering Research Institute.

COMING EVENTS

Eighth Industrial Electric Exposition, Penn-Sheraton Hotel, Pittsburgh, Pa., Nov. 7-9, 1961.

National Electrical Manufacturers Association, Annual Meeting, Traymore Hotel, Atlantic City, N. J., Nov. 13-17, 1961.

Southeastern Electric Exchange, Sales, Advertising, and Public Relations Conference, Tides Hotel, St. Petersburg, Fla., Nov. 15-17, 1961.

American Institute of Electrical Engineers, Winter General Meeting and Electrical Engineering Exposition, New York Coliseum, Jan. 29-Feb. 2, 1962.

Missouri Valley Electric Association, Industrial and Commercial Sales Conference, President Hotel, Kansas City, Mo., Feb. 15-16, 1962.

National Home Improvement Exposition, New York Coliseum, March 2-4, 1962.

Sixth National Electrical Industries Show, New York Coliseum, March 11-14, 1962.

Illuminating Engineering Society, East Central Region, Traylor Hotel, Allentown, Pa., April 9-10, 1962.

Illuminating Engineering Society, Southeastern Region, King Edwards Hotel, Jackson, Miss., April 12-13, 1962.

Illuminating Engineering Society, Great Lakes Region, Dayton Biltmore Hotel, Dayton, Ohio, April 16-17, 1962.

Illuminating Engineering Society, North Central-Midwest Region, Hotel Radisson, Minneapolis, Minn., May 10-11, 1962.

Illuminating Engineering Society, Pacific Northwest Region, Davenport Hotel, Spokane, Wash., May 17-18, 1962.

Illuminating Engineering Society, South Pacific Coast Region, El Cortez Hotel, San Diego, Calif., May 21-22, 1962.

Illuminating Engineering Society, Inter Mountain Region, Western Skies Hotel, Albuquerque, N. Mex., May 24-25, 1962.

Illuminating Engineering Society, Northeastern Region, U. S. Thayer, West Point, N. Y., June 11-12, 1962.

Lighting products

Hubbell multi-purpose dimmer

The Hubbell-trol, a new type of electric light dimmer, which operates both incandescent and rapid-start fluorescent lights on the same circuit by means of an inconspicuous control switch fitting any standard two-inch switchbox, has been announced by Harvey Hubbell, Inc., P.O. Box H, Barnum Sta., Bridgeport 2, Conn.

Because its transformer can be remotely surface mounted in a



basement, attic, or nearby closet, the dimmer requires no special wall construction. Its standard 4½- by 2¾-inch switchplate and gold-trimmed control knob blend into the decor of any room.

A saturable reactor rather than an auto-transformer, the device handles up to 600 watts of incandescent alone, fluorescent alone, or incandescent and fluorescent lighting together. This dimmer smoothly and continuously "tunes" the light from full brightness to total darkness.

Write P-1101 on reply card, p. 21

Compact security fixture

A "dusk-to-dawn" security light is being marketed by American Electric Manufacturing Corp., 3271 Chelsea, Memphis 8, Tenn., in a new compact package that includes everything but the pole.

The lighting package is designed to simplify ordering, warehousing, inventory, and installation.

The compact package measures

15 by 15 by 33 inches and weighs 33 pounds. The container features punch-out hand grips for easy handling.

Each package contains a 175-watt mercury vapor luminaire with built-in ballast and lock type tubeless photoelectric control, a 175-watt mercury vapor lamp, and a 2½-foot aluminum mast arm. The equipment also is available with the luminaire head prewired with seven-foot lead wires and mounting bolts for attaching the arm to the pole.

Write P-1102 on reply card, p. 21

Plug-in hanging fixtures

Hang-A-Lites by Modernera of California, 3115 S. Broadway, Los Angeles 7, Calif., are a new line of ceiling fixtures with portable features.

The new line, which does not require a special electrical installa-

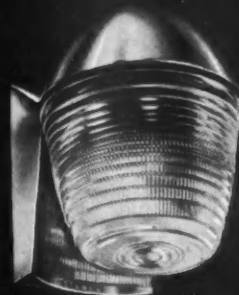


tion, plugs into baseboard or wall outlets, and may be hung from any spot on the ceiling at any height.

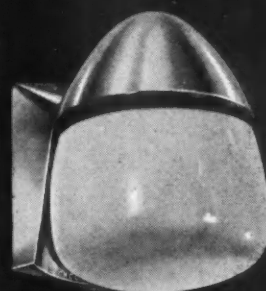
The fixtures can be hung by two Molly bolts from a plaster ceiling, or by two screws from a wood or wood beam ceiling. All are equipped with 15 feet of wired brass chain with a plug and two Molly bolts.

One fixture from this line is the No. 8003, a turquoise ceramic lamp with cut-out Sgraffito design of gold. The fixture is 13 inches long and 13 inches in diameter at the widest point.

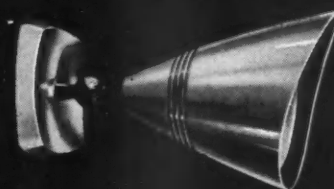
MORE BEAUTY IN OUTDOOR LIGHTING



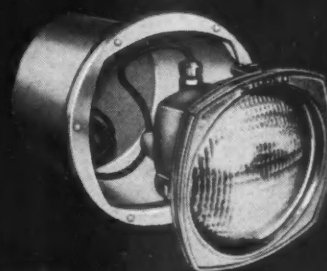
NEW . . . prismatic luminaire



NEW . . . opal series



NEW . . . bullet beauty



NEW . . . underwater lights

WRITE FOR CATALOG S-61

STONCO lighting

STONCO ELECTRIC PRODUCTS CO.

333 MONROE AVE., KENILWORTH, N.J.

© 1961

Special canopies are available for use when the fixtures are hung with existing ceiling outlets.

Write P-1103 on reply card, p. 21

G-E mercury post-mount unit

A new mercury powerpack post-mounted luminaire, designed for application flexibility and smart appearance, has been developed by General Electric Co., 1 River Rd., Schenectady 5, N. Y.

The new unit, designated PMA-115, is offered with a built-in ballast for a 175-watt or 250-watt,



7,000-lumen mercury vapor lamp, and can accommodate up to a 405-watt, 6,000-lumen incandescent lamp for applications requiring shorter burning hours.

Besides a choice of lamp types and sizes, the PMA-115 is available with a narrow, medium, or wide rectangular light distribution, a circular light pattern, or four-way light distribution pattern; with individual photoelectric control or for remote control switching; and in aluminum and five optional colors.

A prime feature of this new luminaire is its shatter-resistant acrylic refractor. The unit is intended to be used where low mounting heights (ten to 20 feet), light control, and decorative appearance are important, such as pedestrian malls and driveways.

Write P-1104 on reply card, p. 21

Color-texture lighting panels

Luminous Ceilings, Inc., 3701 N. Ravenswood Ave., Chicago, Ill., announces the marketing of Texture-Luminus, a new non-burning vinyl panel producing a distinctive color and texture pattern through its irregular-surface design.

The versatile cube-cell structure, perforated or non-perforated, offers wide possibilities for lighting design. Panels are marketed in two-by-two-foot and two-by-four-foot sizes, in white or in a wide range of pastel colors, color being located

on the center membrane of the panel only. Panels are also available with a black irregular-surface area.

Because of their established non-burning chemical properties, the panels are recommended for use under sprinkler systems.

Write P-1105 on reply card, p. 21

Sylvania industrial fixtures

The Power-V series, a complete and versatile line of RLM industrial fluorescent lighting fixtures, has been announced by Sylvania Electric Products, Inc., 1 48th St., Wheeling, W. Va.

Ruggedness of fixture construction and trim appearance are two basic features. In addition, the simplicity of design provides for ease of installation and maintenance.

All Power-V models producing both ten and 25 per cent nominal up lighting are designed for high efficiency. The fixtures are adaptable to 430-ma rapid-start and instant-start lamps, 800-ma high-output rapid-start lamps, and all types of the powerful 1,500-ma extra-high output rapid-start lamps.

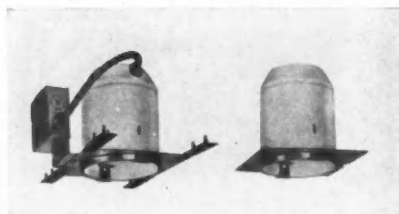
Write P-1106 on reply card, p. 21

Moe recessed housing unit

The "Adjust-All" round recessed housing unit, designed to fit a variety of trims and glass, and offering complete versatility in recessed lighting, is available from Moe Light Div., Thomas Industries, Inc., 207 E. Broadway, Louisville 2, Ky.

Available in either a prewired (M-6000) or unwired (M-6001) version, the light unit offers 18 different lighting effects without structural or wiring changes.

The new unit, which has spring type mounting, fits tightly and adjusts easily to plaster frames. Fast removal is possible with a quick twist at the keyhole on each side



of the housing. Adjustable for 75-, 100-, and 150-watt bulbs, and supplied with snap-on bar hangers, the flexible Adjust-All is easy to inspect. A snap-open cover on both sides of the outlet box permits fast wiring and inspection of prewired housing.

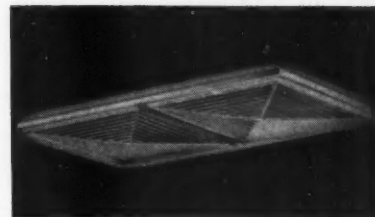
The trims and glass accessories, which are available in a wide range of finishes, fit either prewired or unwired housings and are available in open trim reflector lamps, trim and glass for standard lamps, or decorative glass for standard lamps.

Write P-1107 on reply card, p. 21

Day-Brite surface fixture

A new high-quality surface type fluorescent fixture that seems to "float" on the ceiling is being introduced by Day-Brite Lighting, Inc., 6260 N. Broadway, St. Louis 15, Mo.

The fixture, the Tiara, has precision, pyramid-shaped lenses which direct the light to create the "floating" effect. Depth of the fixture is 1-5/16 inches at its outside edge, and 3-3/16 inches where the fixture's lenses taper to the deepest point. Aiding the floating illusion is a small upward component of light directed through slots in the fixture. This reduces brightness contrast be-



tween the thin side panel and the ceiling.

Prisms in the lenses bend the light downward to increase its usefulness, rather than directing it horizontally into the eyes. The overall appearance is clean, modern, and ultra-shallow.

The Tiara measures 25 by 50 inches and uses four-foot fluorescent lamps. There are no hot spots or noticeable variations in surface brightness. The fixture's multiple knockouts permit end-to-end, side-by-side, or end-to-side installation.

Write P-1108 on reply card, p. 21

Metalcraft shallow troffers

A shallow line of compact plastic and glass troffers, the Aurora line, for direct lighting, is available from Metalcraft Products Co., Inc., 6225 State Rd., Philadelphia 35, Pa.

The series, which is only four inches deep, is designed for 20- and 40-watt rapid-start lamps in sizes ranging from one by four feet to four by four feet. The troffers are available in two-, three-, four-, six-, and eight-lamp combinations.

Equipped with jiffy clip hangers and U-bar hangers, the units are completely die-formed. The heavy

LIGHTING for NOVEMBER, 1961

gauge glass frames may be hinged from either side, and are secured by positive inconspicuous knurled head captive screws.

Write P-1109 on reply card, p. 21

Lightguard plug-in control

An automatic plug-in street light control, the Dialatrol, from Lightguard Electronic Manufacturing Co., Inc., 1213 St. Emanuel St., Houston 3, Texas, provides for simple screwdriver adjustment of the operating level desired in the field without removing the control from its receptacle.

For instance, it is possible to change the light operating level at



dusk from 1/2 to three footcandles and to read the footcandle setting in the light-admitting window. The control also permits simple regulation of illumination time.

The control device provides Varistor surge-protection for the hermetically sealed photoconductive cell, as well as a 1,500-watt rating with incandescent lamp loads, since so many floodlights of this wattage are now available.

Write P-1110 on reply card, p. 21

Mitchell lamp testing device

A new type of lamp testing equipment from the Mitchell Lighting Div., Compco Corp., 1800 N. Spaulding Ave., Chicago 47, Ill., provides a quick and easy method of testing fluorescent and incandescent lamps and fluorescent starters.

The new equipment will test fluorescent pre-heat, rapid-start, and circline lamps as well as fluorescent starters FS-2 for 14-, 15-, and 20-watt lamps; FS-12 for 32-watt circline lamps; FS-25 for 25-watt



lamps; FS-4 for 30- and 40-watt lamps; and no-blink starters.

The incandescent lamp testing equipment is designed to handle all multiple filament lamps (two- and three-way) as well as single-filament lamps. Adjustable clips permit various types of installation.

The unit is finished in washable baked-on hammertone enamel and is supplied with unbreakable sockets.

Write P-1111 on reply card, p. 21

Steber outdoor color wheels

Complete weatherproof protection of mobile lighting is provided in the new outdoor color wheels introduced for the coming Christmas season by Steber Div., Pyle-National Co., 2700 Roosevelt Rd., Broadview, Ill. These augment their complete line of indoor and outdoor



holiday lighting equipment for metal or flocked trees, entrances, and outdoor displays.

Outdoor color wheels are offered in two models, one with a spike for mounting in turf and the other with a sturdy clamp for mounting to pipe, fence, gutter, metal awnings, etc. All are equipped with a suitable cord for plugging into a lamp socket or convenience plug outlet.

Write P-1112 on reply card, p. 21

Sterner outdoor fluorescent

Sterner Industries, Winsted 1, Minn., creators of the Circa-lite design utilizing stacked circular fluorescent lamps, is introducing a completely new line called Trianon.

Basic unit of the line, distinguished by a modernistic, curved tri-taper aluminum pole, is the six and eight-lamp Circa-lite luminaire. The six-lamp model delivers 15,000 lumens output from a unique ar-

QUALITY MAKES THE DIFFERENCE!

BERGER Precision Engineered PARTS

For
Low-Cost, Trouble-Free
Assembly Specify Berger...

- PIPE 
- SWIVELS 
- RUNNING THREAD NIPPLES 
- FINIALS 
- ARMS 
- OTHER QUALITY COMPONENTS

Ask your
Representative
or Write Today
for Samples and Catalog!

BERGER
MACHINE PRODUCTS, INC.
74-16 Grand Avenue, Maspeth (N.Y.C.) N.Y.
DEfender 5-8000

range of 40-watt, 16-inch diameter circular lamps; the eight-lamp model delivers 20,000 lumens.

The complete luminaire assembly, housed in a clear Plexiglas enclosure, is suspended from a triangular-shaped, tapered pole mounted on an exclusive hinged base that permits one-man relamping and servicing of the entire unit from ground level. Ballasts are mounted inside the pole at its base for easy accessibility.

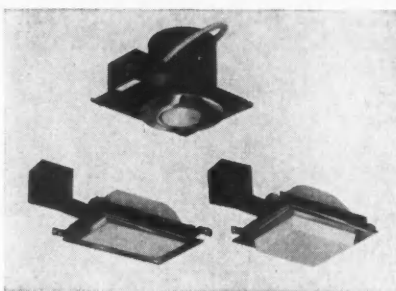
Trianon is available in over-all heights of ten to 15 feet.

Write P-1113 on reply card, p. 21

Emerson-Pryne housings

Individual housings that accommodate a wide variety of fronts, a new simplified numbering system, and faster, easier installation are features of the new expanded line of residential and commercial recessed lighting fixtures from Emerson-Pryne Div., Emerson Electric Co., 8100 Florissant, St. Louis 36, Mo.

Designated S-R-O (square-round-oblong) the new line comprises 13 housings and 36 different fronts including flat and drop bowl lenses, louvered, conical, skirted, eyeball,



pinhole, and adjustable spot.

To permit maximum flexibility, all housings can accommodate several fronts. The new round Universal-All lighting lens housing can be used with any of 67 different fronts and finish combinations.

Faster installation of these new fixtures is possible through use of slip straps with built-in nail prongs furnished with two models. These permit nailing directly to studding. Standard bar straps are included with other models.

Fronts are made of anodized aluminum to eliminate rust, corrosion, and deterioration. They are available in anodized chrome, brass, copper, and painted. All fixtures are U.L. listed and carry a five-year warranty.

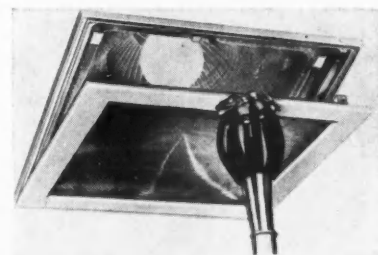
Write P-1114 on reply card, p. 21

Holophane recessed fixture

A recessed incandescent lighting fixture with prismatic reflectors and lenses, and featuring an automatic latching device that simplifies lamp replacement, is now available from Holophane Co., Inc., 342 Madison Ave., New York 17, N.Y.

The glass reflectors and lenses have optical prisms molded in their surfaces to direct the light in the most efficient and pleasing manner. The reflector, which is concealed above the ceiling, is in the general shape of an inverted square bowl and directs the upward components of light downward, thereby preventing them from being wasted.

The lighting fixtures are 12 inches square. The reflector and bulb socket are housed in a steel box equipped with mounting straps



NEW

Velvet White

ADJUSTABLE LAMP POSTS

or SATIN BLACK

... and now we have a beautiful new Velvet-Smooth White finish on Adjusta-Lamp Posts. It's a dip-coating applied on an iron phosphate base of immaculately-cleaned steel tubing. It's a beauty ... with real sales appeal!

IN WHITE OR BLACK, CHOOSE FROM . . .

- SINGLE COLUMN, 7 ft. Height
- ADJUSTABLE, to 8 ft.
- With or Without Weather-Proof Convenience Outlet
- With or Without Photo-Relay "On at Dusk . . . Off at Dawn Switch"
- With or Without House Number Board and Bracket

Priced Low Because We Specialize in Many Other Tubular Steel Products.

ADD BRACKET AND NUMBER BOARDS TO YOUR LINE • INSTALLS IN CROSS ARM HOLES IN ALL LAMP POSTS.

WRITE FOR LITERATURE AND PRICE LISTS. FACTORY REPRESENTATIVES WRITE ABOUT OPEN TERRITORY



ADJUSTA-POST MFG. CO.
910 ST. CLAIR STREET
AKRON 7, OHIO

Introducing a new catalog by

SHELDON

A comprehensive portfolio of over 100 spinning and stamping products designed with quality and elegance in mind.

SHELDON

METAL PRODUCTS CO., INC.,
18 MARTINE STREET,
FALL RIVER, MASS.

Catalog upon request

for faster
above
knockout
also are
which co
the ceilin
to confor
Bulbs
To open
ance ma
the lens
changer,
ward. Th
is then
changer.
pushing
with the
Write F

Adjusta

A new
door lam
by Adjust
910 St. C

Adjust
able in
velvet w
The
through
cleaning
lowed b
phatizing
coating,
stance
Write

High co

The h
brightne
fixtures
line of
which h
Electro
ina St.,



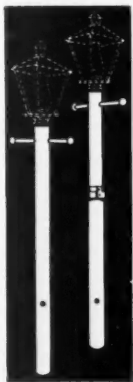
for fastening to structural elements above the ceiling. Appropriate knockouts for electrical connections also are provided. The molding which conceals the joint between the ceiling and fixture is adjustable to conform to ceiling irregularities.

Bulbs are changed from the floor. To open the fixture, the maintenance man merely pushes "up" on the lens with a long-handled bulb changer, and the lens hinges downward. This exposes the bulb, which is then changed with the bulb changer. The lens door is closed by pushing "up" on the frame, again with the long-handled bulb changer.

Write P-1115 on reply card, p. 21

Adjusta-Post outdoor posts

A new velvet-white line of outdoor lamp posts has been introduced by Adjusta-Post Manufacturing Co., 910 St. Clair St., Akron 7, Ohio.



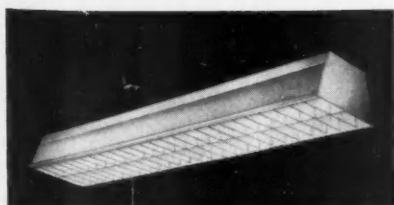
Adjusta lamp posts are now available in a choice of either the new velvet white or in satin black.

The new coating is possible through an immaculate chemical cleaning of the steel tubing, followed by a process of iron phosphatizing, prior to the white dip-coating, to insure long corrosion resistance of the lamp post.

Write P-1116 on reply card, p. 21

High control fluorescent

The highest degree of control of brightness in fluorescent lighting fixtures is possible with the new line of parabolic Alzak troffers, which has been introduced by the Electro Lighting Corp., 1536 S. Paulina St., Chicago, Ill.



Designed to accommodate two lamps, the troffers have contoured aluminum sides and a contoured center wireway cover that comprise the twin reflective element. This parabolic shape and the 75 per cent minimum reflectivity of the Alzak finish assure maximum downward control of the light, which means viewers see no glare from the fixture.

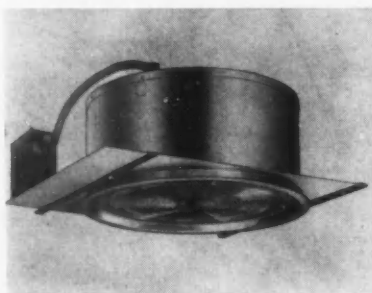
Available in 48- and 96-inch lengths for T12 or T17 lamps, the troffers are also made in five-foot lengths for the low brightness T17 lamps. With T12 lamps the cross-wise shielding is 40 degrees. For lengthwise shielding of 40 degrees cross fins of parabolically shaped extruded aluminum are available.

Although the reflective elements are of aluminum, the wiring channel is made of 20 gauge steel. The fixture is also available in an all white baked enamel finish.

Write P-1117 on reply card, p. 21

Art Metal aluminum rounds

Art Metal Lighting Div., Wakefield Corp., 1814 E. 40th St., Cleveland 3, Ohio, has announced a new line of aluminum recessed and surface rounds with prismatic Am-



colenses and white Amtex glass diffusers.

Diffusers are regressed above the ceiling to lessen glare and provide an architecturally pleasing ceiling surface. Face trim and housing are aluminum. The plaster frame is cadmium-plated steel.

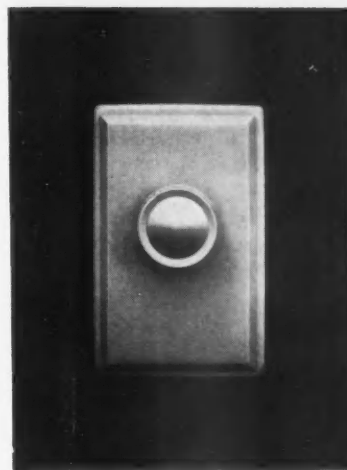
Write P-1118 on reply card, p. 21

Lutron incandescent dimmer

One of the first four-stage incandescent light controls fitting into a standard wall box has been announced by Lutron Electronics Co., 230 Fifth Ave., New York 10, N. Y.

The "Dimitron" can be installed quickly without special construction or knocking out of walls. Operation of the device is based on an exclusive electronic principle.

Full lighting range may be dialed within a convenient one-quarter



turn: off, 20 per cent, 50 per cent, and 100 per cent illumination. The exterior of the Dimitron is designed in gleaming gold and cream-beige. The smooth-surface switch plate is unmarred by screws. The householder may paint or paper the unit to match walls.

The electronic device controls up to 400 watts, conservatively rated, incandescent only, with no interference to radio or television reception.

Write P-1119 on reply card, p. 21

P&K lamp lowering device

Production of a new luminaire lowering mechanism that permits ground level maintenance on street lights, area lights, and floodlights has been announced by Pfaff & Kendall, 84 Foundry St., Newark 5, N. J.

The new U.L.-listed device is available on a wide range of P&K



aluminum lighting standards, single- and twin-arm models with truss arms up to 15 feet long.

This device can be used to support pendant type incandescent or mercury vapor luminaires and bail- or yoke-suspended single or twin floodlights. The unit has been found

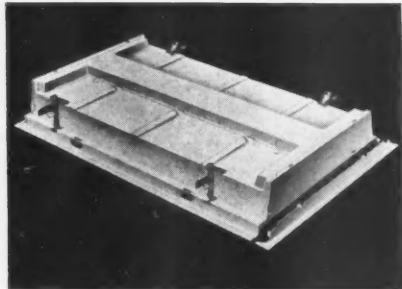
ideally suited for locations inaccessible to the usual maintenance equipment or where such equipment is not on hand.

With this device, ground level re-lamping or luminaire service becomes convenient and economical.

Write P-1120 on reply card, p. 21

Westinghouse recessed units

A new line of recessed commercial fluorescent luminaires, called the Mark II Mainliner, is now available from the Westinghouse Light-



ing Div., Edgewater Park, Cleveland, Ohio.

The new luminaires were specially designed to assure accurate

dimensions, high strength, and easy installation.

The types of luminaires offered are wide flange, grid, and T-bar. With each type there is a choice of louver, diffuser, or lens shielding. Depending on the choice of shielding, available materials include glass, metal, or plastic.

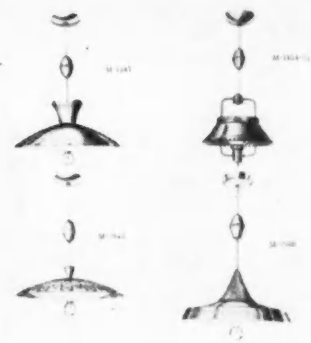
Sizes range in width from one to four feet and in length from two to eight feet. Round fixtures are available with two-, three-, and four-foot diameters.

Write P-1121 on reply card, p. 21

Moe decorative fixtures

New from Moe Light Div., Thomas Industries, Inc., 207 E. Broadway, Louisville, Ky., are a pendant fixture and four pulldowns, all featuring special combinations of metal and glass that provide new beauty plus quality lighting.

One in this group is the modern cylindrical pendant, M-1441, featuring a slim, polished satin brass housing, and clear crackle glass cover. The fixture can be used singly as an accent light or combined with other M-1441 units to



form interesting decorative groups.

Twenty inches long and 3½ inches in diameter, the pendant has a plastic cord and type HB glass cover. One 100-watt bulb is recommended for this lamp.

The pulldown fixtures are composed of brass or copper finishes, with white or milk glass, and offer a variety of styling from different periods.

Write P-1122 on reply card, p. 21

Kurtzon ceiling fixture

Contemporary design is emphasized in the walnut framed, large sized ceiling fixtures being intro-

ANGELO BROS. COMPANY ONE OF AMERICA'S LEADING LIGHTING GLASS DISTRIBUTORS

WHO
STOCK THESE
AND MANY MORE
ITEMS FOR FAST
SHIPMENT

OR

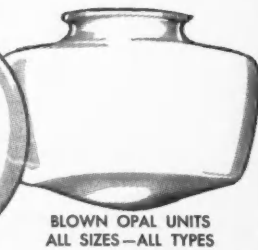
"DROP SHIPPED"
FOR EXTRA LOW
PRICES



BATHROOM GLASS



BLOWN OPAL UNITS
ALL SIZES—ALL TYPES

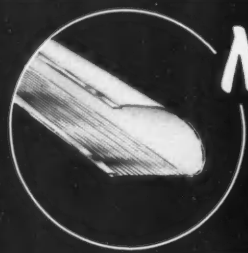


"HURRICANE" — "WILLIAMSBURG"
STUDENT SHADES AND CHIMNEYS



WRITE FOR OUR
200-PAGE CATALOG
AND PRICE LIST

ANGELO BROS. CO. 2333 N. MASCHER ST.
PHILA. 33, PA.



NEW Sterling DUO-TONE plastic shielded bracket

ONE LIGHT or TWO LIGHT

15W • 20W • 30W • 40W

REG. or INSTANT START



"DUO-TONE", offers a perfect dual effect by means of a new Tu-Tone polystyrene diffuser. The crystal clear ribbed bottom gives maximum down light, while the soft white top portion refracts additional light downward and provides glare free room lighting. This unique plastic shielded fixture with chrome finish is ideal for Bathroom, Kitchen, Showroom and many other applications.

Sterling
INDUSTRIES
5697 RISING SUN AVE. • PHILADELPHIA 20, PA.

In Canada: VERD-A-RAY ELECTRIC PRODUCTS, LTD., Montreal

duced by Morris Kurtzon, Inc., 1420-30 S. Talmon, Chicago 8, Ill.

The new fixtures, because of their simplicity, will harmonize with a wide variety of furniture styles. Four basic molding patterns are available in three basic sizes—from approximately two to four feet square.

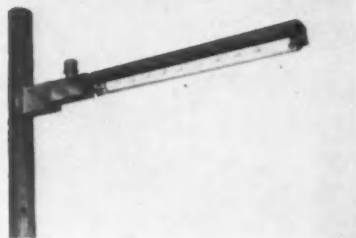
Larger sizes and specially designed shapes may be ordered on an individual basis. The same quality of finish and electrical construction will be provided. The number of lamps per unit can be varied to meet the need of any special installation. Various finishes are available.

Write P-1123 on reply card, p. 21

Hi Products outdoor lamp

Development and production of an economical fluorescent fixture to complement their line of mercury vapor exterior lighting units has been announced by Hi Products, Inc., 2641 S. Louisiana Ave., Minneapolis 26, Minn.

Termed the Hi-Liner fluorescent luminaire by the manufacturer, the new unit is available in two models and is for use in any area.



One model has the ballast mounted vertically in the bracket. The other model has the ballast housed in the mast arm of the unit. Both are available with a photoelectric cell to automatically control on and off sequence according to exterior lighting conditions. The luminaires are also available with a standard three-prong twist-lock connector for the photocell or without a socket or photocell.

The low-wattage units can be rotated 360 degrees and may be tilted from 0 to 90 degrees. Constructed of steel which has been hot-dipped galvanized, the bracket and mast-arm connect to an aluminum lamp housing finished in weatherproof, baked-on enamel.

Write P-1124 on reply card, p. 21

Always Select The EXECUTIVE INN



Indianapolis, Ind.

US 40-52-421 E. Washington and New Jersey



100 ultra-modern, luxurious rooms in downtown. Beautiful Mayfair Dining Room, Jubilee Cocktail Lounge. TV and Telephones in all rooms. American Express and Carte Blanche Credit Cards honored.

BANQUET & MEETING FACILITIES

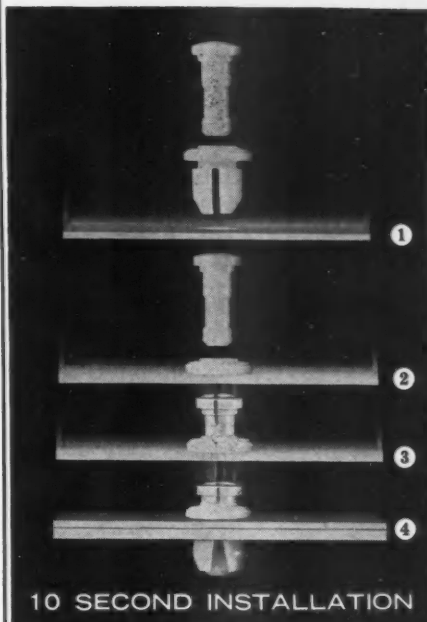
Executive Inn MOTOR HOTELS CORPORATION

CHICAGO, ILL. International Motor Hotel (O'Hare Field) Town & Country Motor Hotel (Calumet City)	Cincinnati (continued) North Plaza Motor Hotel North Center Motor Hotel DALLAS, TEXAS Executive Inn DAYTON, OHIO Drake Motor Hotel Mayfair Motor Hotel	Dayton (continued) Terrace Motor Hotel INDIANAPOLIS, IND. Executive Inn Gateway Motor Hotel Mayfair Motor Hotel Meadows Motor Hotel Executive Inn	LOUISVILLE, KY. Standford Motor Hotel Towne Terrace Motor Hotel NORFOLK, VA. Admiralty Motor Hotel TUCSON, ARIZ. Executive Inn
--	---	--	---

- Teletype Service for FREE IMMEDIATE CONFIRMED RESERVATIONS
- For information - write EXECUTIVE INN, 401 E. Washington, Indianapolis, Indiana.

NYLATCH®

LATCHES FOR LIGHTING FIXTURES



10 SECOND INSTALLATION

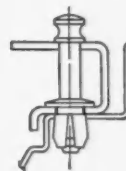
- ① PUNCH A STANDARD HOLE.
- ② PUSH IN GROMMET - CAPTIVATED!
- ③ PUSH IN PLUNGER - CAPTIVATED!
- ④ PUSH TO LATCH - PULL TO UNLATCH.

WHITE

TO BLEND WITH YOUR FIXTURE!

With Nylatch you will save assembly time and your customers will save in maintenance costs. Nylatch is being used to replace all manner of latches, captive screws, stud fasteners and spring clips.

Nylatch is a positive interference type fastener, thoroughly tested for rugged, dependable service. It will not unfasten under the severest conditions of impact or vibration, and yet may be easily opened and closed 30,000 times without appreciable loss of holding power.



EXTENDED PLUNGER

Perhaps you require our extended plunger designed for channel constructions common to the lighting industry.

Write today for sample and literature:



THE HARTWELL CORPORATION

9035 VENICE BLVD., LOS ANGELES 34, CALIF.

BRANCH OFFICES: • CHICAGO • CLEVELAND • FORT WORTH • HACKENSACK • SEATTLE • WICHITA

Lighting bulletins

Numerous groupings of colorful pendants and satin opal glass fixtures are illustrated and described in a lighting catalog available from **Prescolite Manufacturing Corp.**, 2229 Fourth St., Berkeley 10, Calif.

Write B-1125 on reply card, p. 21

Brass, aluminum, and copper lanterns from the Charles Richter collection are described and shown in the new lantern catalog now offered by **Metal Stamping and Spinning Corp.**, 160 E. First St., Mount Vernon, N. Y.

Write B-1126 on reply card, p. 21

The new 40-page Lumi-Flo manual describing air-handling troffers has been announced by **Benjamin Div.**, Thomas Industries, Inc., 207 E. Broadway, Louisville 2, Ky. The booklet is complete with illustrations.

Write B-1127 on reply card, p. 21

Various models of recessed lighting receptacles with snap-in springs are described in detail in the catalog now available from **Triboro Electric Corp.**, Waterbury and Ten Eyck Sts., Brooklyn 6, N. Y.

Write B-1128 on reply card, p. 21

The line of art Beam-Lites now designed to illuminate exhibits, paintings, etc., is covered with ordering data and prices in a catalog available from **Morda Distributing Co.**, Dept. L-10, P. O. Box 24036, Los Angeles 24, Calif.

Write B-1129 on reply card, p. 21

More than 40 styles of fiberglass diffusers, reflectors, shades, sheets, and cylinders are included in the designers' sheets and price lists offered by the **Marplex Co.**, 348 Washington St., El Segundo, Calif.

Write B-1130 on reply card, p. 21

Lustrex permatone lighting louvers, made of ultraviolet light-stabilized styrene, are fully discussed in a comprehensive technical report from Mon-

santo Chemical Co., Plastics Div., Room 801, Springfield 2, Mass.

Write B-1131 on reply card, p. 21

Alzak aluminum reflectors, ranging in use from indoor lighting to ball park lamps, are covered in the brochure, "Story of Alzak Reflectors," from **Major Equipment Co.**, 4603 Fullerton Ave., Chicago 39, Ill.

Write B-1132 on reply card, p. 21

A new full-color SRO catalog from **Emerson Electric**, Dept. B93, 8100 Florissant, St. Louis 36, Mo., shows and describes recessed fixtures and their effects in various shapes and sizes from the Emerson-Pyrne lighting line.

Write B-1133 on reply card, p. 21

An illustrated catalog giving design information on Starglow W-shaped fluorescent fixtures with the ultra-low profile is now offered by **Modern Light Company** of St. Louis, 7809 Maplewood Industrial Court, St. Louis 17, Mo.

Write B-1134 on reply card, p. 21

A 48-page catalog now available from **Crescent Brass Manufacturing Corp.**, Seventh, Spruce and Bingaman Sts., Reading, Pa., illustrates and describes lighting fixtures and lamp parts made from cast brass.

Write B-1135 on reply card, p. 21

Sealed-beam mercury vapor floodlights from **Stonco Electric Products Co.**, Kenilworth, N. J., are described in detail in catalog No. MV. The catalog explains the hermetically sealed reflectors and other advantages of this line.

Write B-1136 on reply card, p. 21

Complete information and prices on a small but versatile photocell light control, which can be installed in existing systems, is available from **Electronic Manufacturing Co., Inc.**, 1213 St. Emanuel St., Houston 3, Texas.

Write B-1137 on reply card, p. 21

Standard, intermediate, or candelabra bases with candle flame lamps using special carbon filaments are covered in literature and prices now available from **North American Electric Lamp Co.**, 250 Fulton St., New York, N. Y.

Write B-1138 on reply card, p. 21

Pipe, swivels, running thread nipples, finals, arms, and other quality components are covered in a catalog available from **Berger Machine Products, Inc.**, 74-16 Grand Ave., Mespeth, New York, N. Y.

Write B-1139 on reply card, p. 21

A comprehensive portfolio of more than 100 spinning and stamping products has recently been prepared by **Sheldon Metal Products Co., Inc.**, 18 Martine St., Fall River, Mass. Ordering data and specifications are included.

Write B-1140 on reply card, p. 21

Cadmium plate Gimbal rings for various size lamps, with both side prong and screw type bases, are included in detailed literature which is available from **Alexander-Tagg Industries, Inc.**, Hatboro, Pa.

Write B-1141 on reply card, p. 21

Lighting fixture latches, designed to replace ordinary latches, captive screws, stud fasteners, and spring clips, are described in literature now offered by the **Hartwell Corp.**, 9035 Venice Bldg., Los Angeles 34, Calif.

Write B-1142 on reply card, p. 21

A detailed engineering report on Bonus Line ballasts is now being offered from **General Electric Co.**, Section 403-03, Danville, Ill. Those ballasts discussed are designed to protect against leaking, smoking, and burning.

Write B-1143 on reply card, p. 21

Snap-in fixture receptacles are described and illustrated in a new catalog available from **Leviton Manufacturing Co., Inc.**, 236 Greenpoint Ave., Brooklyn 22, N. Y. The catalog covers the complete line of snap-in devices.

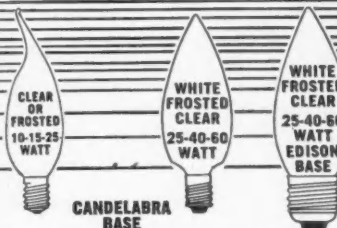
Write B-1144 on reply card, p. 21

A brochure covering the Instalite line of engineered lighting mounting equipment from **Century Lighting Co.**, 521 W. 43rd St., New York 36, N. Y., is now available. The line runs from trim plates to junction boxes.

Write B-1145 on reply card, p. 21

DECORATIVE LAMPS

IMPORTED FROM EUROPE • Catalog and Prices on Request



Elite CO., INC.

"long a leader in the field of lighting"
111 WEST 22ND ST., N.Y.C. 11, N.Y.
Watkins 4-3220

A 68-page catalog now available from the **Ruby Co.**, 129 W. 27th St., New York City, N. Y., illustrates in color the early American and other antique fixtures now reproduced. Ordering information and details are included.

Write B-1146 on reply card, p. 21

A brochure now available from **Ward Engineering, Inc.**, 6439 San Fernando Rd., Glendale 1, Calif., describes the automatically smooth tension action of Ward swivels. Specifications and ordering data are included.

Write B-1147 on reply card, p. 21

New designs in desk lamps are described and illustrated in the new catalog and discount information available from **Acme Lite Products Co., Inc.**, Congers, N. Y. Included are facts on the magnifying fluorescents and on various desk type models.

Write B-1148 on reply card, p. 21

A 14-page infrared heating design manual is now available from **Luminator, Inc.**, 120 N. Peoria St., Chicago 80, Ill. The manual discusses the nature and systematic control of infrared heating systems, and includes reflector energy charts as well as data guides in meeting the needs of various commercial and industrial situations.

Write B-1149 on reply card, p. 21

Moe Light Div., Thomas Industries, Inc., 207 E. Broadway, Louisville 2, Ky., has issued a specialized eight-page catalog on decorative drum lighting fixtures to introduce its new series of flare-shaped drums.

Covered are drum-shaped fixtures of hand-blown white opal glass for over-all shadowless lighting on walls, ceilings, and floors in homes or institutions. Light curves and coefficient tables accompany each drum type and size in the catalog.

Write B-1150 on reply card, p. 21

A newly published illustrated catalog from **Philite Radiant, Inc.**, 32-02 Queens Blvd., Long Island City 1, N. Y., shows the company's new decorative chandeliers for residential and institutional lighting. The 52-page catalog includes collections ranging in mood from the Florentine da Vinci line to the flowing simplicity of the Olympia collection.

Write B-1151 on reply card, p. 21

A recently published illustrated 16-page catalog, No. 66A, available from **J. G. Braun Co.**, 7540 McCormick Blvd., Skokie, Ill., covers specifications and prices of brass lighting ornaments and assembly parts. Items covered range from pulley holders to decorative leaves.

Write B-1152 on reply card, p. 21

K-S-H Plastics, Inc., 10212 Manchester, St. Louis 22, Mo., has announced the availability of their comprehensive plastics lighting catalog through a re-issue. The illustrated catalog has been up-dated to include the new K-4 and K-5 series of K-Lite white opal polystyrene and acrylic prismatic lens panels. The catalog is completely indexed and carries standard AIA filing information.

Write B-1153 on reply card, p. 21

"Why Lifeguard Mercury Lamps?," a new booklet published by **Westinghouse Electric Corp.**, Lighting Div., 1216 W. 58th St., Cleveland 1, Ohio, contains data on various types of mercury vapor lamps. Included are facts on life, maintenance, and lamp construction, and a chart on lumen output, in addition to ordering designations.

Write B-1154 on reply card, p. 21

Just released is the new 16-page illustrated industrial lighting catalog of **Radiant Lamp Corp.**, 300 Jelliff Ave., Newark, N. J. One hundred sixteen different types of hard glass industrial incandescent and mercury reflector lamps for indoor and outdoor lighting are featured, with lamp types and voltages to meet standard and special requirements for industry, from 50 to 10,000 watts. In a new approach to in-

BEDLAMPS MOTEL BEDLAMPS

A NEW CONCEPT IN
**LIGHTING FIXTURES
CLIP-ON FIXTURES
PIN-UP LAMPS
GOOSENECK LAMPS**

REQUEST CATALOG AND PRICE LIST ON LETTERHEAD
REX ELECTRIC Mfg. Corp., 190-L Berry St., Bklyn. 11, N.Y.

CHILO
*Quality Lamp & Shade
Parts for the
Lighting Industry*

CHILO MANUFACTURING & PLATING CO., INC.
2106 - 10 So. Kedzie Ave. Chicago, Ill.

LANTERNS, LIGHTING FIXTURES



Custom-
Fabricated

for Churches, Hospitals, Public Buildings, etc. No order too large, none too small. We will be glad to quote on your requirements.

LIGHT STANDARDS

**STAINLESS STEEL ALUMINUM
WROUGHT IRON GENUINE BRONZE**

Write on Your Letterhead for Illustrated Catalog



MEIERJOHAN-WENGLER

1102 W. 9th St. CINCINNATI 3, OHIO

Over 1/3 Century of Experience

dustrial lighting, this catalog is designed as a guide for buyers of industrial lamps in specifying the lamp that exactly fits the particular use to which it will be put.

Write B-1155 on reply card, p. 21

An illustrated price guide, No. 11-A, covering **fluorescent equipment**, is now available from **Kenbert Arpag Co.**, 220 Coster St., New York 59, N. Y. The catalog offers rapid reference to complete ordering data for residential, commercial, and industrial fluorescent fixtures.

Write B-1156 on reply card, p. 21

An extensive catalog including booklets on both **fluorescent and incandescent lighting fixtures** for residential, commercial, and industrial lighting is now offered by **L & P Lighting**, P.O. Box 157, Olive Branch, Miss. Illustrations, diagrams, and data charts are included, as well as application suggestions.

Write B-1157 on reply card, p. 21

A catalog covering the Fibrez collection of **lamp shades and diffusers** is offered by the **General Plastics Corp.**, 12414 Exposition Blvd., Los Angeles 64, Calif. Featured in the catalog is the Galaxy line of molded fiberglass diffusers. Also included are other lines, as well as fixture accessories.

Write B-1158 on reply card, p. 21

The White line of portable and adjustable **bench, table, and floor lamps for commercial use** is described in a catalog from the **O. C. White Co.**, 17 Hermon St., Worcester, Mass. Halo-Lite magnifying lamps for assembly and inspection of miniature parts are also included in the illustrated folder.

Prices and complete specifications are given for all models.

Write B-1159 on reply card, p. 21

Texture-Luminus, a non-burning **vinyl ceiling panel** producing a warm, distinctive color and texture pattern through its irregular surface design, is described and illustrated in literature available from **Luminous Ceilings, Inc.**, Dept. TL-1, 3701 N. Ravenswood Ave., Chicago, Ill.

Write B-1160 on reply card, p. 21

Bulletin GEA-7223, a 30-page booklet from **General Electric Co.**, 1 River Rd., Schenectady 5, N.Y., describes the G-E complete **area lighting line** with eight new products. Included are an equipment quick selector, sample lighting layouts, and descriptions of typical area lighting applications, with photographs, layouts, and equipment recommendations. Applications encompass sports and recreation, industrial and commercial, building facades and vertical surfaces, decorative and walkway, shopping centers, parking lots, and large areas. Complete data on all fixtures is included.

Write B-1161 on reply card, p. 21

Wall or ceiling mount **cast aluminum lighting fixtures** designed for outdoor use in all types of public buildings are illustrated and described in folio CA-61, available from **Gruber Bros., Inc.**, 90 S. First St., Brooklyn 11, N.Y.

Write B-1162 on reply card, p. 21

Code article

(Continued from page 54)

rage as a building or room where not more than three vehicles are or may be stored. (Note, incidentally, that here only an indoor location is intended.)

This use of the term *storage* in relation to an ordinary residential garage indicates that *parking* and *storage* are intended to mean the same thing insofar as the Code rules are concerned.

Therefore, by the provisions of Section 511-1, any car lot or drive-in with spaces for more than three vehicles or where one or more of such vehicles are normally repaired is a commercial garage and must be treated as such.

How is it, then, that car lots are frequently permitted to have festoon lighting with unprotected lamps hanging from these overhead "stringers"? Are drive-in movies and similar outdoor locations required to have lighting and its associated wiring and controls in compliance with the

rules applying to commercial garages?

The Code requirements governing lighting in all types of "automobile occupancies" will be discussed next month. Suffice it to say until then that drive-in movies do have to be treated as commercial garages the same as any other car lot.

Also to be discussed next month will be the difference in the requirements for lighting and its associated wiring when installed in the hazardous areas and when installed above such areas, as well as clearance requirements for overhead wiring in car lots.

Gym lighting

(Continued from page 52)

"The unusual strip of fluorescent lighting," explains Mr. Schroedel, "achieved the specific architectural effect desired by Mr. Burkhard, in that it gives the visual impression of a roof which floats over the main structure."

Mr. Burkhard designed the gymnasium and fieldhouse with bridge cables supporting the entire roof at all points except where it is fastened to the exterior walls in order to provide an interior completely free of columns or other intruding supports.

The design also made possible a system of skylights and automatic louvers controlled by photoelectric cells which close or open in response to the amount of daylight falling on the roof.

A series of 78 foot-high pylons grasp the steel bridge strands which support the floating roof. The ends of the strands are anchored in continuous concrete "dead men" buried 12 feet below the surface.

The gymnasium and fieldhouse, upstairs gym, and apparatus room are lighted with mercury vapor Abolite HMFAU-2400 fixtures, with Jefferson No. 233-901 ballasts, providing lighting of some 90 footcandles. The fixtures have been arranged alternately so that there can be either 45 footcandles or 90 footcandles, depending upon use desired. The fieldhouse normally is lighted to a 45-footcandle rating, as is the swimming pool.

All of the lighting was achieved

**Design Your Line
With Gimbals
in Mind**

**USE ATI
GIMBAL
RINGS for:**

**MORE SALES APPEAL
VERSATILITY AND
ADAPTABILITY
QUALITY FEATURES
LONG LIFE
CONSTRUCTION**



GIMBAL RING* for
PAR 38, 46, 56 and
the 64 side prong
lamps

GIMBAL RING* for
R 30, R 40 and PAR
38 screw-base
lamps



*Cadmium plate, brushed chrome effect. Use
as is or paint over.

Write or call for details

ATI ALEXANDER-TAGG INDUSTRIES, INC.

HATBORO, PENNSYLVANIA
OSborne 5-7200

at a cost of only 94 cents per square foot, or \$93,606.17 for 99,500 square feet.

Successful selling

(Continued from page 52)

ing experts. The service is even helpful to experienced lighting engineers who know the engineering part of their work but not design.

The sketches often include fixtures specially designed for that particular job, to be made in the shop of Nemco Electric. These shop facilities likewise enable the company to offer a service not available to their competitors.

From their Seattle plant and offices, Seattle Lighting Fixture Company serves most sections of the state of Washington, and some areas outside. The company has filled a number of orders from Alaska. Sales contacts are made by a staff of six outside salesmen.

Dimming systems

(Continued from page 46)

tem, preferably cool white. Whenever possible, use lamps of the same brand and with the same date of manufacture.

Even then, normal manufacturing tolerances may result in slight differences in both lamp and ballast operating characteristics. The effects of these differences can be minimized by installing a luminous ceiling with a deep plenum area.

Because a high-resistance contact at the lampholder may cause poor starting or may extinguish lamps at a low level, high-quality

lampholders must always be used. Good lamp-to-pin contact within the sockets must be assured.

In selecting ballasts consideration should be given to sound rating, power factor, and radio interference characteristics.

Church lighting

(Continued from page 43)

the way up is its only ornamentation. This spidery construction again required additional brightness, for the smaller the object the more brightly it must be lit to maintain equal visibility.

It has been said that architecture is a good index to the culture of a period. Today with so many wonderful tools with which to work, the architect has an unprecedented opportunity to truly reflect the culture of the period in which we live.

The lighting engineer must face up to his responsibilities in this connection, and make it possible for us all to enjoy these wonderful new structures as much at night as by day.

Room of Tomorrow

(Continued from page 40)

the steps leading into the living-dining area, and at the same time lighting up the plants and greenery that are part of the decorative scheme.

At the other end of the room is a handsome pulley fixture with a translucent wood shade. In another corner is a new wall lamp on a pantograph arm—ideal for the salesman who has to write midnight orders and reports.

In the bath-dressing room, a

13-foot length of modular lights over the mirror offers the same candid custom-lighting of a stage star's dressing room to permit perfect light for a woman's make-up or a man's shaving.

For the terrace-deck, there are two lights: a recessed fixture on the ceiling, and on the floor a low-level outdoor lamp. The latter is an adaptation of a Japanese stone lantern with large scale perforated metal and a bright red band.

While the decorative motif in the "Room of Tomorrow" is very much in evidence, easy maintenance was another important factor considered. The lamps and fixtures are constructed out of such easy to care for materials as precision molded plastic and anodized aluminum.

In addition, the surface and recessed fixtures are equipped with a relamping mechanism to speed the work of changing bulbs. The diffusing enclosure of the fixture is pulled down and remains safely suspended, leaving both hands free to change bulbs or clean the surface.

The "Room of Tomorrow" will be a stellar feature of the hotel exposition and will be shown also at the Mid-West International Hotel Show to be held in Chicago in February, 1962.


Industrial course

(Continued from page 39)

fee) was very worthwhile. Most of the students said they even liked the homework.

But, most important to the utility was the question that asked

The glow...the touch...
of real candles...with



NALCO ELECTRIC WAX CANDLES

They look like real candles, with a soft, yellow-orange glow. They feel like wax, but are made of "Poly" and won't melt.

The soft shimmer of candlelight, from a small neon bulb embedded in the flame-shaped tip, lends an aura of elegance to chandeliers and sconces. Use Electric Wax Candles wherever you light for atmosphere.

Available in regular or candelabra base.

NORTH AMERICAN
Electric Lamp Co. 1536 N. 13th St. St. Louis 6, Mo.
250 Fulton St. N.Y., N.Y.

**LIGHTING'S
CLASSIFIED ADS
ARE ON PAGE 77**

the man whether he thought the lighting would be improved in his plant as a result of the course. About two thirds of the answers were "yes," the rest were "possible" and "hopeful."

As long as these answers are obtained, the course will also be worthwhile to Wisconsin Electric Power Co.

Home relighting

(Continued from page 38)

Down light on the work counters is provided by rows of recessed units with one 75-watt R/30 spot or floodlamp in each one. The units are housed in the furring (which has been extended the depth of the base cabinets) over the cabinets. Two 60-watt bulbs were used in the hood which was added over the range.

Five fixtures and four portable lamps with a total of 1,080 watts were added to the bar and in the family room.

The public is turning to garden lighting and this family was interested enough to add 18 weatherproof bullets totaling 2,550 watts of floodlighting. The bullets were positioned high in trees, on the bath house, and on the corners of the home. Twenty-one mushroom portable lamps, with 60 watts of light in each, were permanently installed.

Modernizing older homes furnishes an unbelievable market for current lighting practices. People living in these older homes appreciate being informed about the difference between an outdated lighting system and one that is modern and well planned. This housewife said, "This system has brought more real pleasure to our living than any other single thing that has ever been added in our home."

Prismatic lenses

(Continued from page 35)

stalled in their place. Lenses are installed in door frames which are hinge-mounted for easy opening and closing when changing bulbs. Lens and door design is such that there is no light leakage. The architects provided a symmetrical arrangement in positioning the lights and sound system speakers within the ceiling area.

In the press section of the printing department three rows of lights on eight-foot centers provide the necessary illumination. The luminaires are on eight-foot centers, end-to-end. The ceiling in this case is of two- by four-foot panels, and to provide the optimum lighting with a minimum of fixtures, some panels were cut in two so the lights could be positioned for maximum lighting effectiveness. One half of a cut panel is installed at each fixture, balancing out the modular design.

The board room has a six- by 16-foot luminous panel made up of 12 of the standard fixtures and lenses. The ceiling again is acoustical tile and the lighting fixtures tie in with the pattern aesthetically and structurally.

Other areas lighted with the selected luminaires include additional general offices, executive offices (four luminaires are formed into a panel above the president's desk), meeting rooms, the mail room, etc.

Park lighting

(Continued from page 32)

There are five basic types of lighting units which have some 40 variations made possible with different equipment. The lights,

located in gardens and trees, are specially camouflaged.

Turned on, they transform the popular park, which annually is visited by more than 7,000,000 tourists, into a spectacular setting.

The lighting will be turned on every night of the year, the Park Commission announced. Mr. Watson explained that the lighting would be equally beautiful in the wintertime, when there is snow and ice, with the anatomy of the trees reflected against the dark sky. An automatic timeclock turns on the lights each night.

Mr. Watson, who received his master's degree from Texas A. & M. College in 1947, has carried out various projects throughout the United States and Mexico. Two years ago he designed a similar system which is in operation in Queenston Heights Park, also part of the Niagara Parks System.

The system in Queen Victoria Park, which consists of more than 400 units, serves to illuminate over 1,000 trees. The majority of the units are mercury lamps, although there are some incandescent units as well.

Mr. Watson explained that the mercury lamps serve to enhance the effects of green foliage, while the incandescent lights give flowers and flowering shrubs a realistic appearance.

The lighting creates illumination similar to that from the moon, although the intensity is two or three times that achieved by normal moonlight.

Installation of the lighting system has involved a great deal of coordination between the designer, the electrical contractors, and various departments within the Niagara Parks Commission.

Hundreds of trees have been specially pruned to accommodate the unusual lights. The parks horticultural department has carried out additional plantings of shrubs and trees to obscure transformers and other equipment required in the project.

The masonry department has installed concrete platforms to accommodate lighting units located on the ground. In addition all of the underground cable was covered with a layer of concrete.



**America's
MOST UNUSUAL
BULB**

"Flicker Flame"

SELLS ON SIGHT!
The Flicker Flame Bulb will burn for years at a cost of about one penny per week.

For true candelight effect, the flame shaped carbon filaments flicker and glow realistically.

A cheery mellow glow for fashionable dining. Flicker Flame Bulbs are packed 24 to an attractive counter display box... or 72 bulbs in a free electrified counter display.

Ask about our jobbers set-up.

Write for our 200 page Catalog and Price List.

CATALOG NO. 3060

ANGELO BROS. CO.

2333 N. MASCHER ST., PHILA. 33, PA.

CLASSIFIED

RATE: \$15.00 per column inch.
Minimum charge: one column inch.

QUALIFIED REPRESENTATIVE

The Mitchell Lighting Division seeks qualified representation for its full line of commercial, industrial, institutional and outdoor fluorescent lighting equipment. Applicant should be conversant with and have entry into the offices of architects and engineers or have public utility, distributor or contractor experience. Many territories are currently available. Send full details to Mitchell Lighting Division, 1800 North Spaulding Avenue, Chicago 47, Illinois.

LIGHTING SALES REP.

Sta-Brite Fluorescent Manufacturing Co. Prestige "Public" Company and established leader in the lighting industry seeks qualified sales representation for its competitively priced, attractively commissioned line of INDOOR, OUTDOOR and SIGN Lighting. Must have following among Electrical Distributors, Electrical Contractors, Architects and Specifying Engineers. Send resume including present products and territory to: Mr. N. Furman, STA-BRITE FLUORESCENT MFG. CO., 3550 N.W. 49th St., Miami, Fla.

TOPFLIGHT SALESMAN WANTED

Lighting Fixture Salesmen: Only the "pro" who has made it—and still wants to make more. No others, please. Our residential line will keep you running. Open—New York state, New England, Midwest to far west, including California. Box 174, LIGHTING, 1760 Peachtree Rd., N.W., Atlanta, Ga.

JOBBER WANTED

We seek to purchase outright an established jobber of residential lighting fixtures. Any situation interesting. All replies strictly confidential. Send full details to Box 204, LIGHTING, 1760 Peachtree Road, N.W., Atlanta 9, Ga.

MANUFACTURERS REPRESENTATIVE

Desires additional industrial line. Now calling on distributors, contractors, architects and engineers in Southern California and San Diego for nationally known commercial line. Write Box 217, LIGHTING, 1760 Peachtree St., N.W., Atlanta 9, Georgia.

TOPFLIGHT OPENING IN LIGHTING SALES

Exceptional opportunity for dynamic, resourceful manufacturer's representative to sell a complete line of quality incandescent and fluorescent lighting equipment. Must be fully experienced in calling on architects, engineers, distributors, contractors. Opening is in the highly-productive Cleveland area. Write full details to Box 218, LIGHTING, 1760 Peachtree Rd., N.W., Atlanta 9, Georgia.

WANTED

Young man as assistant to National Sales Manager of Lighting Glass Manufacturer. Must be willing to relocate and extensive travel contacting key accounts. Salary & Expenses. Contact Box 219, LIGHTING, 1760 Peachtree Road, N.W., Atlanta 9, Georgia.

EXECUTIVE WANTED

Large West Coast Manufacturing concern of fluorescent lighting fixtures seeks the services of a top notch executive with experience in fluorescent lighting. Phone personality a must, with ability to administrate and run entire operation. Write fully in complete confidence. Replies to Box 220, LIGHTING, 1760 Peachtree Rd., N.W., Atlanta 9, Ga.

"The fastest growing manufacturer of quality fluorescent lighting fixtures on the East Coast has a number of prime openings for qualified sales personnel. Men with experience in contacting Contractors, Engineers and Architects have a unique opportunity for a high paying position where the Sky is the Limit. Unusual opportunities for the right man in New York, New Jersey and New England. Additional representation also required in New York City Metropolitan area. All replies of course, in strictest confidence." Box 221, LIGHTING, 1760 Peachtree Rd., N.W., Atlanta 9, Ga.

Representatives wanted for a competitively priced fast moving residential line. Openings in Southern, Midwestern and Western states. Top commissions paid. Advise lines you are carrying and territories being covered. Box 222, LIGHTING, 1760 Peachtree Road, N.W., Atlanta 9, Ga.

ATTENTION MANUFACTURERS

Merchant Salesmen—organization capable to handle volume over one million direct personal contact with all top Architects & Engineers, Electrical Distributors and Contractors in areas of Minnesota, Wisconsin, North & South Dakota. Residential incandescent placement our specialty. Re shuffling lines first of year. Reply in confidence. Box 223, LIGHTING, 1760 Peachtree Road N. W., Atlanta 9, Georgia.

LINE WANTED

Representative, established 1950. Alabama, Georgia and the Carolinas. Excellent following Fixture Houses, Electrical Distributors, Architects and Engineers. Desire highest quality and unusual residential line. Details including catalog and price list to: Box 224, LIGHTING, 1760 Peachtree Road, N.W., Atlanta 9, Ga.

LIGHTING SALES ENGINEERS

Manufacturer since 1895 desires lighting sales engineers with following among Architects, Engineers, Distributors etc. Engineered line of Commercial Fluorescent and Incandescent lighting fixtures. 78 page hard back catalog. Corning and Holophane diffusers. Many territories open. Forward complete resume. State lines carried. THE KAYLINE CO., 1241 E. 45th St. Cleveland 14, Ohio.

Established manufacturer of modern residential lighting fixtures requires aggressive salesmen calling on lighting fixture and electrical supply trade. Metropolitan New York, Westchester, Long Island and New Jersey, Mid-western, southern and Rocky Mountain territories open. Mail complete resume of experience, lines handled and territory covered, to Majestic Lamp Mfg. Corp., 230—5th Avenue, New York 1, N.Y.

MANUFACTURER'S REPRESENTATIVES

Well known established firm of outdoor and indoor lanterns and lighting fixtures interested in good experienced salesmen for the territories of Georgia, Indiana, Ohio and West Virginia. State full details to: ACME LANTERNS, INC., 21 Belvidere St., Brooklyn 6, New York.

The OLD Way



The NEW Way



**USE ROYAL
FLUORESCENT
"INSTANT"
LAMP STARTERS**

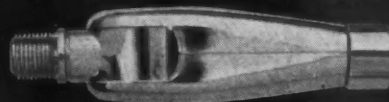
Manufacturing and Serving the Electrical trade in all parts of the world. Certified & Approved by U. L. Laboratories. Guaranteed for Service, Quality and Durability. Packed in attractive color cartons—100% American made. Prices are reasonable. Mail your orders now!

ROYAL PRODUCTS COMPANY, Inc.
19-21 Grain St., Newark 3, N.J., U.S.A.
Essex 5-7887

Fixtures with starters last longer, stay brighter, use Royal Instant Lamp Liters

THE NEW

**Ward Self-Adjusting
Swivel**



adjusts to any position
at a touch, and stays there!

Write for Ward's
brochure today.

Ward ENGINEERING INC

6439 San Fernando Road • Glendale 1, California

ADVERTISER'S INDEX

A		L	
Acme Lite Products Co., Inc.	20	Leviton Mfg. Co.	Inside Back Cover
Adjusta Post Mfg. Co.	68	Lightcraft of California	15
Alexander-Tagg Industries, Inc.	74	M	
Angelo Bros. Co.	70, 76	Marplex Company	78
Appleton Electric Co.	Inside Front Cover	Meirjohan-Wengler Co.	73
Artolier Corp.	5	Miller Clock Co., Howard	47
B		Modern Light Co. of St Louis	27
Berger Machine Products, Inc.	67	Monsanto Chemical Co.	51
C		N	
Chilo Mfg. & Plating Co., Inc.	73	Nord-New York, Inc.	9
Circle F Mfg. Co.	24	North American Electric Lamp Co.	75
Cirvac Plastics Co.	61	O	
Classified ads	77	Owens-Corning Fiberglas Corp.	16
D		P	
Del-Val Mfg. Co.	2	Palnut Company	30
Dini Co., Frank	14	Prescolite Mfg. Corp.	18, 19, 25
Dow Chemical Co.	8	Progress Mfg. Co., Inc.	Back Cover
Duro-Lite Lamps, Inc.	63	R	
E		Rex Electric Mfg. Corp.	73
EJS Corporation	7	Royal Products Co., Inc.	77
E-Lite Co., Inc.	72	Ruby Company	1
Emerson Electric Mfg. Co.	28, 29	S	
Executive Inn Motor Hotels Corp.	71	Sheffield Plastics, Inc.	57
G		Sheldon Metal Products Co., Inc.	68
Garcy Lighting	19	Sinko Manufacturing Co.	11
General Electric Co. (Ballasts)	12	Sola Electric Co.	17
Geringer & Sons Mfg. Corp.	26	Sterling Industries, Inc.	70
Guth Co., Edwin F.	6	Stonco Electric Products Co.	65
H		U	
Halo Lighting Products, Inc.	13	Union Insulating Co.	59
Hartwell Corporation	71	W	
J		Want ads	77
Jay Lighting Mfg. Co., Inc.	23	Ward Engineering, Inc.	77
Jeannette Glass Co.	10	Wilson Lighting & Display, Inc., J. A.	55
K			
Koppers Co., Inc., Plastics Div.	31		

EXCITING NEW TRANSLUCENT DROP LIGHTS

with Marplex parts

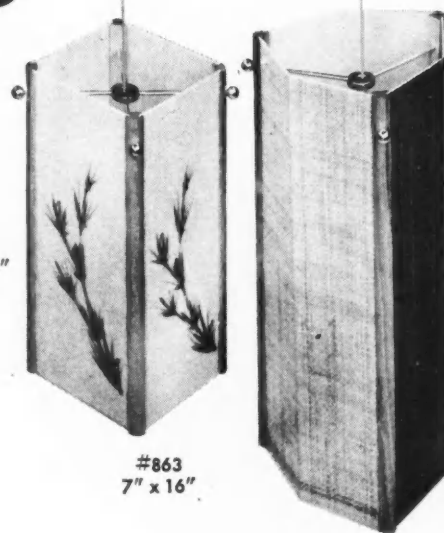
Modern design . . . quality craftsmanship . . . versatility in application, pattern, size and color! The Marplex DROP LIGHT parts are available in Flat or V-Panels. Further variations are possible by using different numbers of panels, by combining Flat and V-Panels, by modifying type, width or shape of mouldings. Marplex can furnish unfinished hardwood mouldings and spiders for assembly. The unlimited range of Marplex colors, textures, patterns and sizes offer equally unlimited combinations available for immediate selection.

Illustrated: Rattan, Walnut, White (#863)
Bamboo (#864)

For literature, prices, and color samples, write to:

Represented by: Weingart & Lustig, Los Angeles 11, California • William A. Hawkins, Cleveland 30, Ohio • Kirshenbaum & Sherman, Brooklyn 22, New York • Richard J. Sanders, Chicago 10, Illinois.

#864
5" x 12"



#863
7" x 16"



MARPLEX CO.

348 Washington St., El Segundo, Calif.

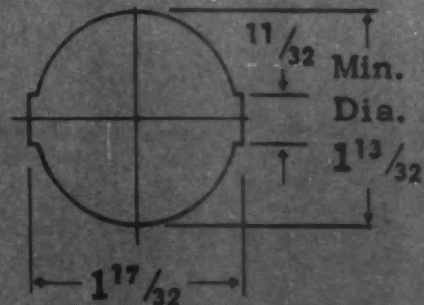
LEVITON SNAP-IN FIXTURE RECEPTACLES

JUST SNAP IT IN — NO STRAPS, NO SCREWS, NO FUMBLING

- #8875—Terminal Screws
- #8876—Leads Attached
- #8877—Quick-Connect Tabs



RECOMMENDED PANEL OPENING



Rated 660W—250V
Listed By
Underwriters' Laboratories, Inc.

Snap-ins take almost all the labor out of lighting fixture assembly.

They eliminate screws, nuts, small parts, reduce handling and cut costs.

Leviton snap-in lampholders hold securely—no screws or rings to loosen. Sockets can't be loosened under any conditions, and will never rotate.

Leviton's complete line of snap-in devices includes the item that will fit your need and budget. The medium base, porcelain keyless sockets shown above, for example, are made with leads, or with quick-connect tabs, or with terminal screws. In any style, you push it in from one side only—and assembly is complete.

For all the details on Leviton's snap-in devices, send today for the latest catalog.

LEVITON QUALITY TALKS BUSINESS

LEVITON®

LEVITON MANUFACTURING CO., INC.

Brooklyn 22, N. Y.

CHICAGO • LOS ANGELES • MONTREAL, CANADA

Contact AMERICAN INSULATED WIRING CORP.
Pawtucket, Rhode Island, A Leviton subsidiary,
for a complete line of insulated wires and cable products

NEW FOR THE MONTH





**IF IT
MOVES
QUICKLY,
IT'S
PROGRESS**



THE POWERFUL NEW SELLING TOOL YOU'VE BEEN WAITING FOR... the PROGRESS Lighting fixture catalog for 1962. It's excitingly new and geared to build sales and profits for you! You'll find page after page of brilliant new fixtures for every need in the home—our most diversified line, yet fewer numbers than ever before! And our totally new merchandising concept makes it possible for you to move actively into better priced Progress merchandise. You'll find the Progress catalog for '62 concise, factual, handsomely illustrated—specifically designed as a realistic sales building tool. Striking clarity of presentation is assured by uncluttered pages of illustrations, plus chart form of listing data. Remember: If it moves quickly, it's Progress... and our new catalog can become your best silent salesman! This coupon will bring your complimentary copy post haste. Fill it in now!

PROGRESS MANUFACTURING CO., Inc.
Philadelphia 34, Pa.

Please send me a free copy of your new lighting fixture catalog.

Name _____

Company _____

Address _____